COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

MARCH 1947



FROM NEW REO FLEET SERVING WINKWORTH FUEL & SUPPLY CO., DETROIT

FIRST—a sound foundation!

Reo's outstanding ability to handle the heavy tough jobs proves the basic soundness of extra-rugged construction. Frames are massive and cold-riveted for extra strength. Springs, axles, wheels and other chassis assemblies also have the heavy-duty dimensions that take full advantage of precise truck manufacture. In this sound foundation there's no unnecessary weight. With it, Reo's abundant power—the great maneuverability and economies of Reo More-Load design—the application of special gear ratios, tandem axles, or body equipment—assure dependable, low-cost service *and profits!* Convenient sales and service now available through a nation-wide network of dealers, distributors and factory branches. REO MOTORS, INC., Lansing 20, Mich.

STANDARDIZE ON REO

1904 • AMERICA'S TOUGHEST TRUCK • 1947

✓R v. 73 March-Aug 1947



Remember this:

A TRUCK THAT FITS THE JOB LASTS LONGER

IT STANDS to reason that a truck will last longer—and will operate more economically—when it's powered with an engine "sized" for the job.

When you buy a Dodge "*Job-Rated*" truck, for instance, you get not one of two or three engines—but the right one of 7 different engines—the one "*Job-Rated*" to handle your jobs most efficiently and economically.

You get the right unit in every other part of the truck, too—the right one of 5 clutches, of 4 transmissions, of 18 rear axles—the right brakes.

Dodge can give you a truck that will fit your job—because Dodge builds a range of 175 different "*Job-Rated*" chassis models.

So if you want a truck "*Job-Rated*" for longer life, greater economy, and maximum dependability—hauling *your* loads over *your* roads—see your Dodge dealer for a truck to fit your job. And remember . . . *only* Dodge builds "*Job-Rated*" trucks!

DODGE DIVISION OF CHRYSLER CORPORATION



DODGE

ONLY DODGE BUILDS "Job-Rated" TRUCKS

Fit the Job . . . Last Longer!

Facts.

CUMMINS
Dependable
DIESELS
SINCE 1918...PIONEER OF PROFITABLE POWER THROUGH HIGH SPEED DIESELS

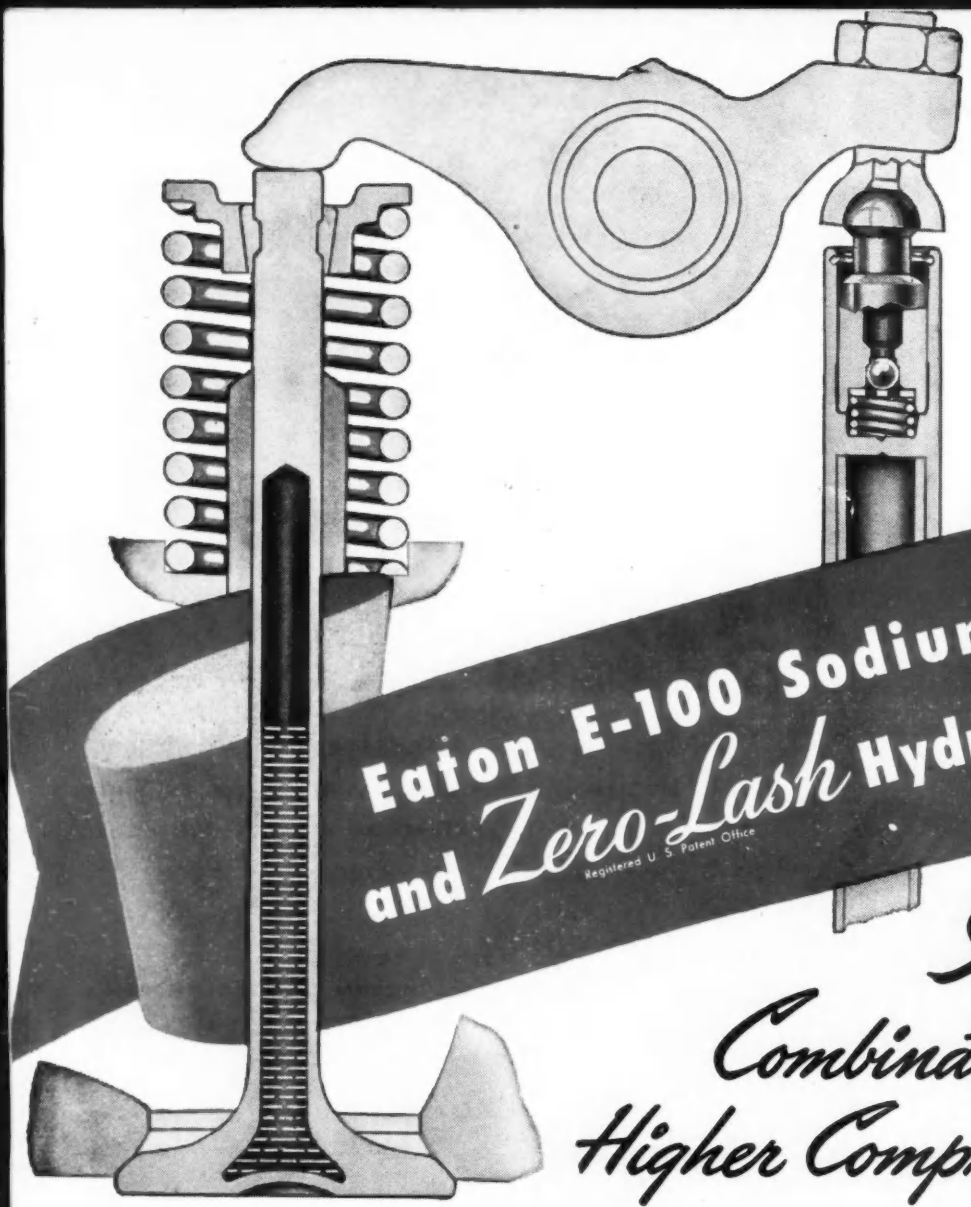
Profitable POWER



Handling heavier loads faster . . . operating on smaller quantities of low-cost fuel 

. . . designed for easy servicing,  Cummins Dependable Diesels are the source of profitable power on hundreds of jobs such as yours.

CUMMINS ENGINE COMPANY, INC. • COLUMBUS, INDIANA



Eaton E-100 Sodium Cooled Valves and *Zero-Lash* Hydraulic Valve Lifters

Registered U. S. Patent Office

Ideal Combination for the New Higher Compression Engines

Today's trend toward engines with higher compression ratios to utilize modern fuels involves materially higher operating temperatures, and places a heavier load on valves and valve gear.

The combination of the Eaton E-100 Sodium Cooled Valve and the *Zero-Lash* Hydraulic Valve Lifter insures perfect seating, proper valve timing at all speeds and temperatures, permits lower idling speeds, and adds materially to valve life.

Eaton has anticipated the requirements of the higher compression engines in developing the new E-100 Sodium Cooled Valve faced with Eatonite, and a specially developed type of *Zero-Lash* hydraulic self-adjusting unit for overhead engines.

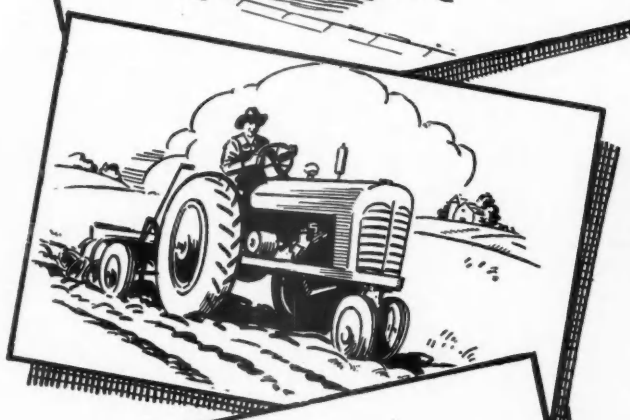
Eaton engineers will welcome an opportunity to discuss the application of sodium cooled valves and hydraulic valve lifters to engines now in the design stage.

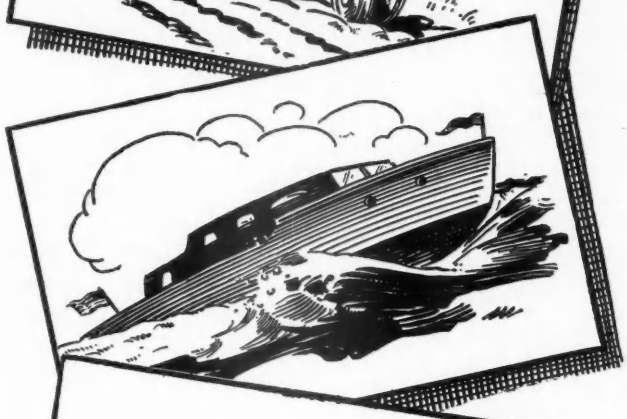
★

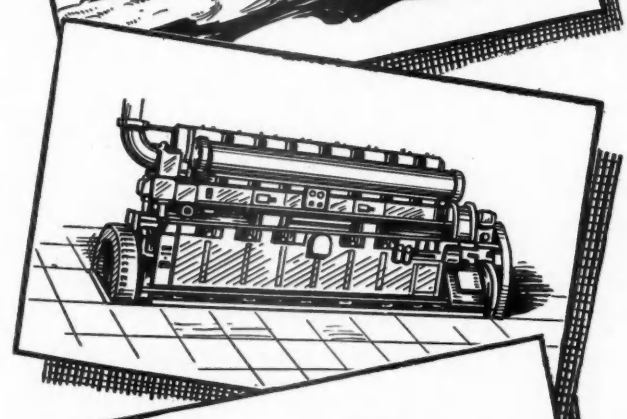
POPPET VALVES · SODIUM COOLED VALVES
TAPPETS · HYDRAULIC VALVE LIFTERS
VALVE SEAT INSERTS · ROTOR PUMPS
TURBOJET ENGINE PARTS

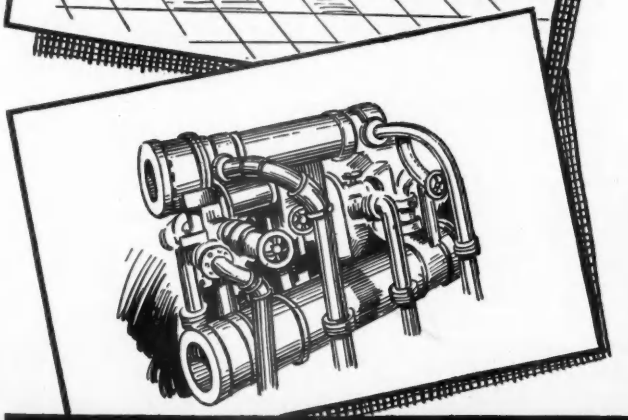
EATON
MANUFACTURING COMPANY
WILCOX-RICH DIVISION
9771 French Road Detroit 13, Michigan











Four For All!

PERMATEX offers you these four top-notch, anti-corrosive, assembling compounds as the answer to your production and maintenance problems! Each one has valuable characteristics that make it best for certain types of assemblies!

Form-A-Gasket No. 1, a paste...sets hard.
Form-A-Gasket No. 2, a paste...sets pliable.
Aviation Form-A-Gasket, a liquid...sets tacky.
Pipe Joint Compound, a liquid...sets flexible.

All of these Permatex assembling compounds make pressure - tight unions . . . leak - proof to gasoline, kerosene, fuel oil, diesel oil, hot or cold lubricants, hot or cold water, salt water, illuminating gas, glycerine and numerous other liquids and gases!

Descriptive literature on request.



PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

COMMERCIAL CAR JOURNAL, Vol. LXXIII, No. 1. Published monthly by Chilton Co., N. W. Cor. Chestnut & 56th Sts., Philadelphia 39, Pa. Subscription price: United States and Possessions, Mexico and Latin American Countries, $5.00 per year; Single copies 50¢, except April issue, $1.00. Canada and Foreign, $10.00 per year. Acceptance under the Act of June 5, 1934, authorized December 18, 1934.

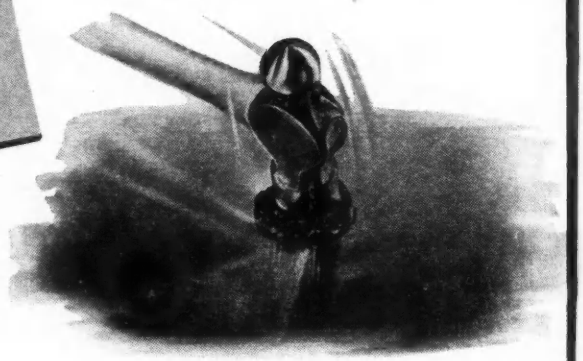
Reduce
CHASSIS MAINTENANCE COSTS

NOW... INCREASE THE MILEAGE BETWEEN CHASSIS LUBRICATIONS... ASSURE FEWER REPAIRS AND REPLACEMENTS!

Fleet operators in all parts of the country get these cost-cutting benefits when they switch from ordinary chassis lubricant to Texaco Marfak.

HERE'S WHY....

1 **MARFAK PROTECTS LONGER.** Hit it as hard as you can, Marfak cushions the blow—doesn't splatter. Just so, Marfak stays in chassis bearings in spite of the pounding of rough service—won't jar out, won't squeeze out.





3 **MARFAK STRETCHES LIFE** of parts. It's cohesive, holds together even when stretched. In a bearing this unique property enables Marfak to seal out dirt and moisture while providing full lubrication. Parts last much longer.



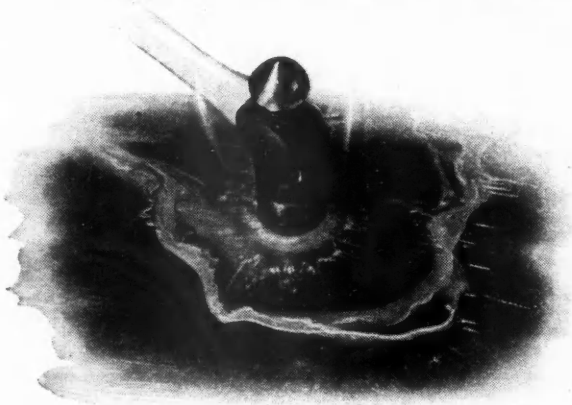
4 **ORDINARY GREASE LACKS** cohesion, has no stretch. It works out of bearings, drops off—thus fails to protect, lets in dirt and moisture. Result: extra expense for frequent greasings, repairs and parts replacements.

Tune in . . .
TEXACO STAR THEATRE
presents the NEW
EDDIE BRACKEN SHOW
every Sunday night.
Metropolitan Opera
broadcast every
Saturday afternoon.

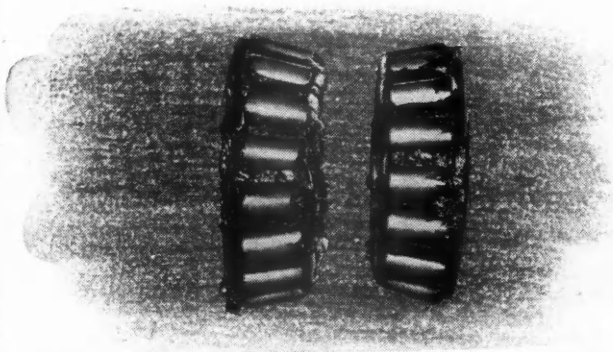
TEXACO

TEXACO





2 **ORDINARY GREASE FAILS** to protect. Splatters under even a light blow — a sure sign bearings would soon be left without full protection.



5 **MARFAK HEAVY DUTY** protects wheel bearings for extra thousands of miles. It stays *in* the bearings, assuring safer braking, and seals out dirt and moisture. It requires no seasonal repacking.

More than 250 Million pounds of MARFAK have been used to date!

Call on Texaco Lubrication Engineering Service for helpful suggestions on cutting chassis maintenance costs. Contact the nearest of the more than 2300 Texaco distributing plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

Lubricants and Fuels

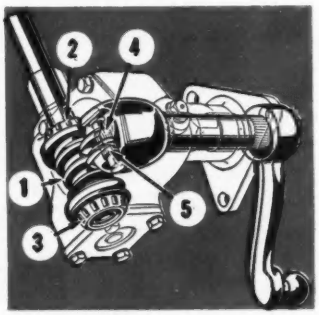
FOR THE TRUCKING INDUSTRY



"FORD TRUCKS LAST LONGER!"

ONE big reason— FORD STEERING STANDS UP!

Ford worm-and-roller steering gear reduces *rubbing* friction to a minimum. *Rolling contact* is employed to reduce friction at five vital points. This spares muscle and saves wear. The worm gear (1) is straddle-mounted on two large, opposed, tapered roller bearings (2 and 3). The worm acts upon an easy-turning roller instead of a common sliding cam or split-nut, and this roller is mounted on two needle-type roller bearings (4 and 5). Bearings of both the worm and the sector shafts may be adjusted, thus promoting long life and proper action with less replacing of parts.



Ford



THE 6 YOUR PICK OF POWER THE V8

Inherent engineering advantages of the Ford heavy duty chassis for tractor-semi-trailer work have made it a prime favorite. Your Ford Dealer can provide the complete unit to meet your needs. Shown is a 24-foot van semi-trailer by Fruehauf Trailer Co., Detroit.

ONLY FORD GIVES YOU ALL THESE LONG-LIFE TRUCK FEATURES: Your choice of two great engines, the V-8 or the Six—semi-centrifugal clutch that needs no maintenance lubrication—rear axle design that takes all weight-load off the shafts (¾-floating in half ton units, full-floating in all others)—heavy channel section frames, *doubled* between springs in heavy duty models—big, easy-action brakes, with heavy, cast drum surfaces, non-warping and score-resistant —extra-thick sheet metal in cabs, cowls, skirts and fenders—all told, more than fifty such examples of Ford endurance-engineering.

That's why FORD TRUCKS LAST LONGER . . . why, as the national truck count for 1946 just released shows, *more than half of all Ford Trucks in use are at least 9 years old* . . . why there are more Ford Trucks in service now than ever before in history. More than 100 body-chassis combinations to choose from. Ask your Ford Dealer.

MORE FORD TRUCKS IN USE TODAY THAN ANY OTHER MAKE



Doctor of Motors Rumor Page



IT'S RUMORED THAT

your 1948 car will have a television set!

"I'm afraid not!" says Joe LaMarsh, Chief Engineer of Stewart-Warner Television Research Staff. "We are now producing television sets in quantity for homes but practical limitations as well as cost, not to mention driving safety, preclude television for your car in 1948."

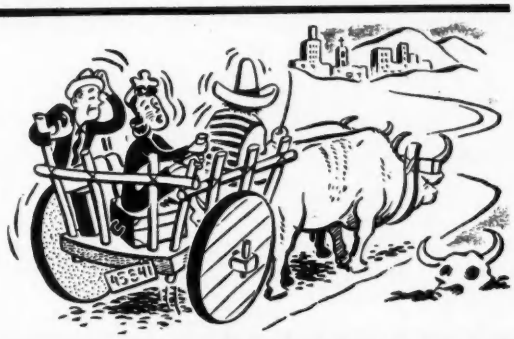


IT'S RUMORED THAT

one state capital in the U. S. can't be reached by train, has no railroad facilities!

We scoffed at that till we checked—and found it true! The capital is Santa Fe, New Mexico, and railroad passengers have to get off at Lamy and be taken to Santa Fe by bus or other conveyance.

Contributed by F. E. Nolen, Colyear Motor Sales Company, Los Angeles



IT'S RUMORED THAT

Fleets can increase road time, cut operating and maintenance costs!

That's what 1,455 fleet owners say who use Perfect Circle's Fleet Survey Plan. F'rinstance, Fleet Superintendent J. I. Hayes of Hayes Freight Lines, Mattoon, Ill., says that the Perfect Circle Analysis Books, which they've used for several years, have "taken the guesswork out of selecting the proper ring set for each engine and for each type of service." The Perfect Circle plan—custom made for your fleet—is yours for the asking.



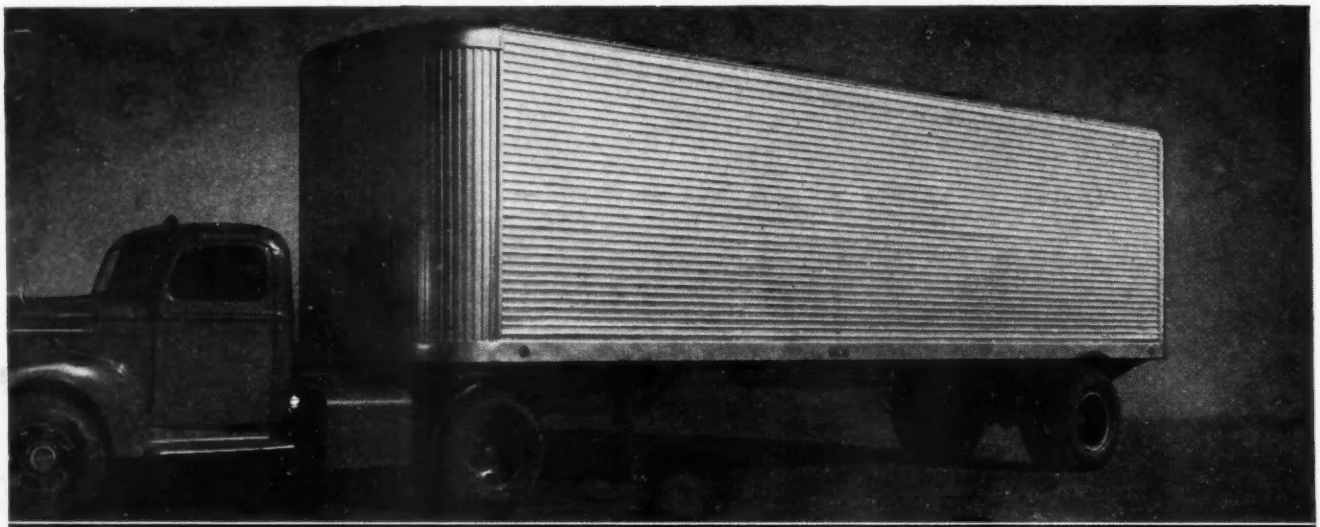
IT'S RUMORED THAT

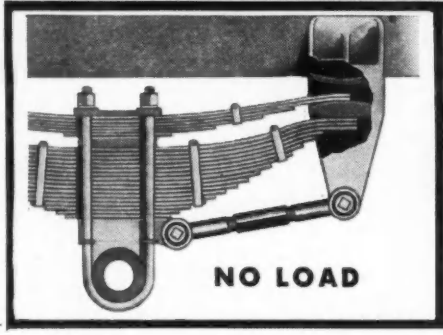
a racing car only 12 inches long can go 100 mph!

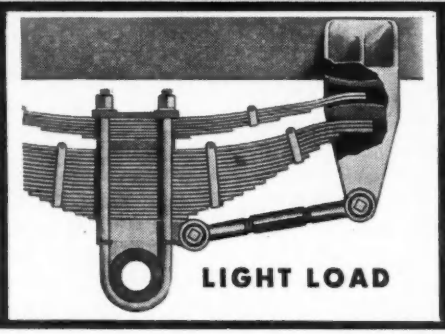
"Right!" says Herman G. Fox, president of the San Francisco Model Midget Association. "In fact, one of our entries was officially clocked at 116.7 mph last season. Incidentally, the Perfect Circles used in these miniature cars are only 15/16 of an inch in diameter!"

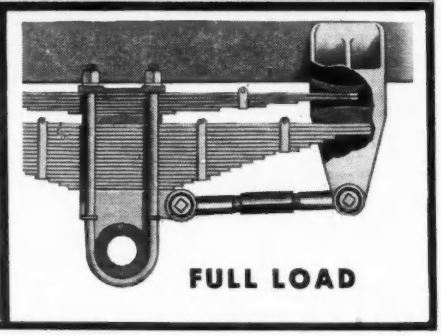


The Perfect Circle Company, makers of Perfect Circle *Custom Made* Piston Ring Sets, will pay fifty dollars ($50) for each rumor, fact or fiction, accepted for this page. Send your rumor to Rumor Page, Perfect Circle, Hagerstown 6, Indiana. All contributions become our property and cannot be returned or acknowledged.









This Makes Sense to Any Trailer Man

GREAT DANE'S Spring Suspension is an exclusive and original feature which prevents YAW*, curtails rebound, provides longer tire life and lowers maintenance costs.

Forged steel torque rods, mounted low enough to insure a direct pull off the center of the axle at full load. Rubber bushed at both ends. Right torque rod adjustable to length by sleeve nut coupling with right-hand threads only, giving complete absorption of twist and assures much longer life to bushings. Adjustment cannot work loose.

Silico-manganese, full-floating, slip-end springs do away with shackles. Heat-treated U-bolts prevent stretching. Extra-long threads with hexagonal high nuts prevent loosening under movement . . . give greater strength. Helper spring acts as shock absorber . . . adds life to entire trailer.

DESIGNED *for* BEAUTY
ENGINEERED *for* STRENGTH

PROMPT DELIVERIES

* *Running out of line.*

The STEEL PRODUCTS CO., Inc.
SAVANNAH • GEORGIA

18

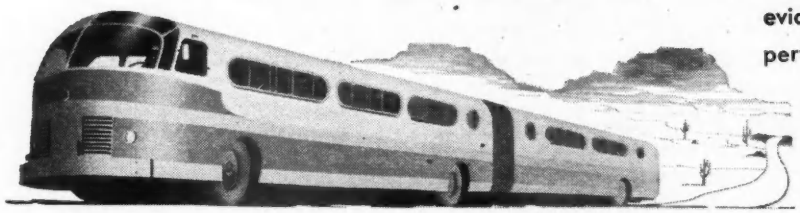
Dependable

CHAMPION

AMERICA'S FAVORITE SPARK PLUG



The bus lines of America are acutely aware of the importance of spark plugs in the maintenance of dependable service and schedules. Engines must provide reliable and smooth-flowing power. Because of this, Champion Spark Plugs are used by more bus lines than any other—a tribute to their outstanding dependability—powerful evidence that they make every engine a better performing, more dependable engine.



FOLLOW THE EXPERTS

DEMAND DEPENDABLE

CHAMPIONS

FOR YOUR FLEET

Listen to the CHAMPION ROLL CALL, Harry Wismer's fast sportscast every Friday night, 9:55 EST over the ABC network ... CHAMPION SPARK PLUG CO., TOLEDO 1, OHIO

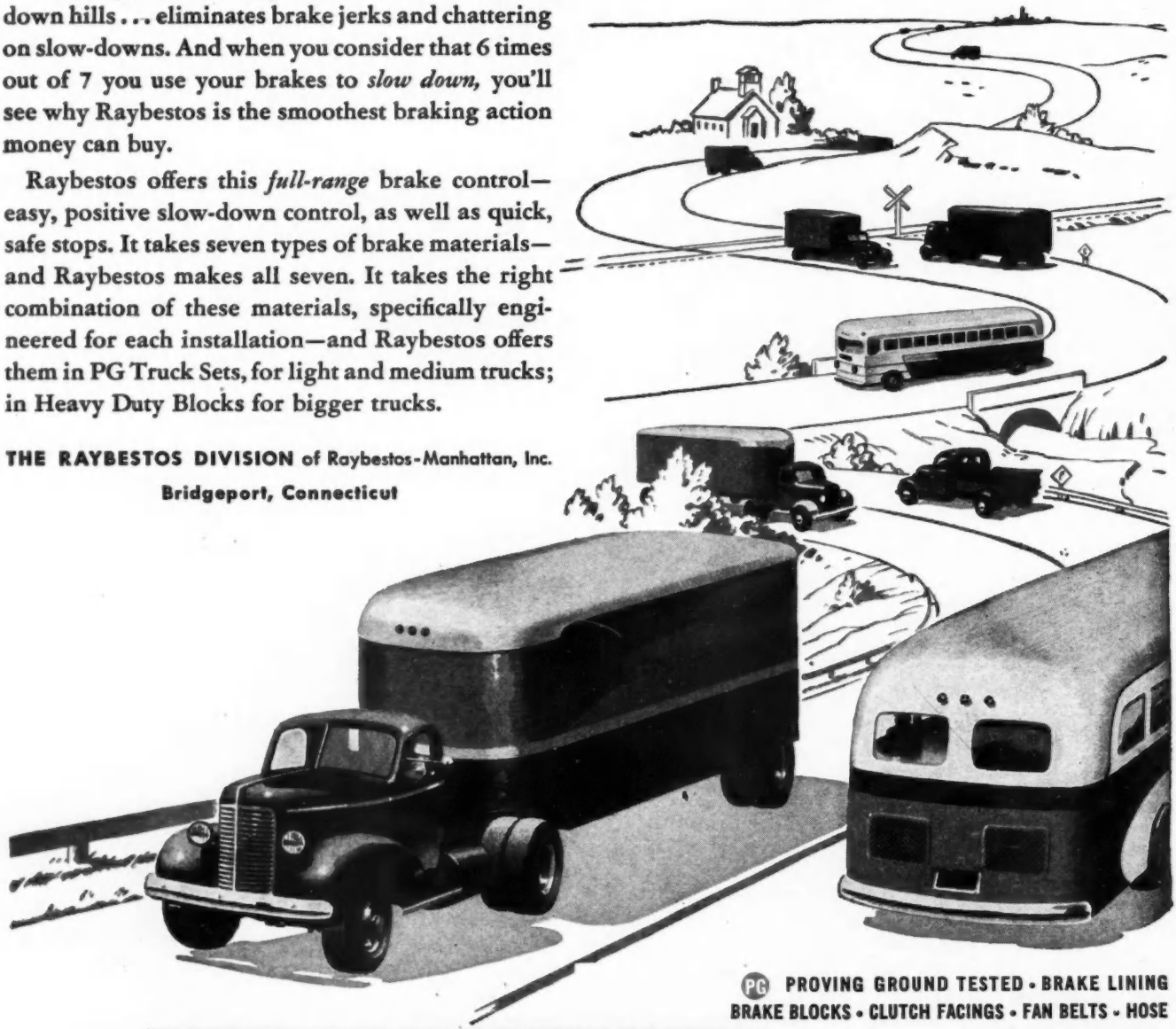
Smooth it Out...

WITH RAYBESTOS FULL-RANGE BRAKE CONTROL

● Full-range braking makes a rough road smoother . . . eases you over bumps, around curves, up and down hills . . . eliminates brake jerks and chattering on slow-downs. And when you consider that 6 times out of 7 you use your brakes to *slow down,* you'll see why Raybestos is the smoothest braking action money can buy.

Raybestos offers this *full-range* brake control—easy, positive slow-down control, as well as quick, safe stops. It takes seven types of brake materials—and Raybestos makes all seven. It takes the right combination of these materials, specifically engineered for each installation—and Raybestos offers them in PG Truck Sets, for light and medium trucks; in Heavy Duty Blocks for bigger trucks.

THE RAYBESTOS DIVISION of Raybestos-Manhattan, Inc.
Bridgeport, Connecticut



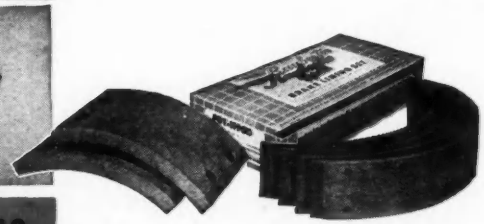
PG PROVING GROUND TESTED • BRAKE LINING
BRAKE BLOCKS • CLUTCH FACINGS • FAN BELTS • HOSE
for Cars, Trucks, Buses and Tractors



RAYBESTOS-MANHATTAN, INC.

Raybestos

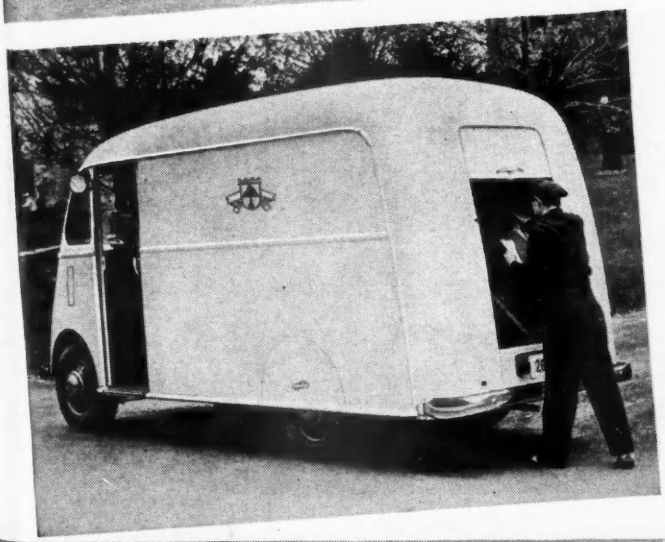
AMERICA'S BIGGEST SELLING BRAKE LINING











On tough jobs like these, savings multiply

with . . .

Stanolube HD

FLEET OPERATORS have put Stanolube HD in many tough spots—on heavy tonnage coal trucks in continuous operation, on large inter-city and bus fleets, on taxi operation and in door-to-door delivery service. In every type of service Stanolube HD has helped reduce engine maintenance—lengthened time between overhauls, reduced sludge, eliminated varnish and ring sticking.

Give a break to your hard-worked fleet engines . . . and to your maintenance men . . . and your pocketbook. Test Stanolube HD where you can compare its performance with that of oils previously used or with other oils now operating in your fleet. A Standard Oil Automotive Engineer will help you make a test. Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA) STANDARD SERVICE

Now *The Final Answer*



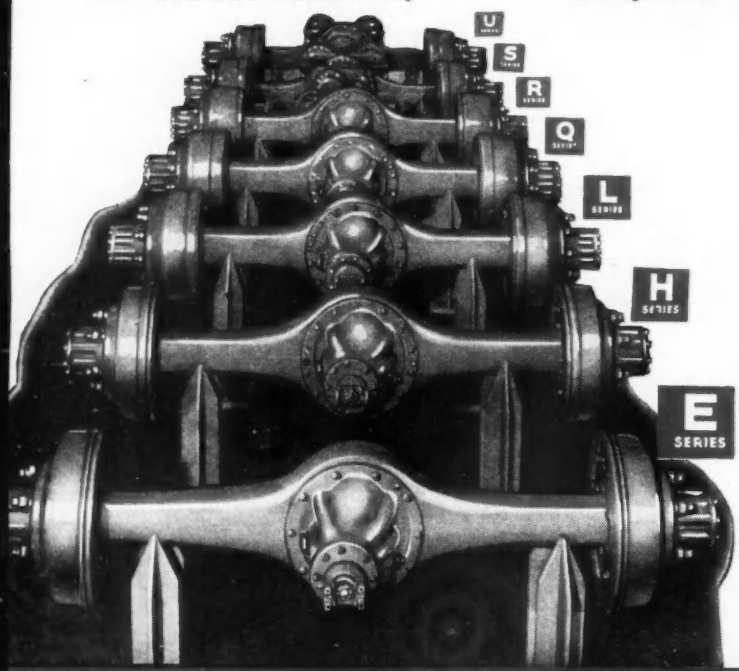
H. F. MATTHYS, BRANCH MANAGER:
"Hypoid gearing is great! So is a choice of three interchangeable types of final drive . . . in a wide range of axle capacities. Timken's "3 for 1" axles are a tremendous help."



A. C. SCOTT, OWNER:
"Trucks must fit the job. New Timken "3 for 1" axles make it easy to use the right final drive for the job and get more efficient, more profitable operation."



E. B. LA BEAU, DRIVER:
"Drivers appreciate the value of the right final drive. It's easier on us . . . easier on the truck . . . saves time and trouble . . . makes for better driving in every way."



Vehicle manufacturers, dealers, operators—everybody in the motor transportation industry—benefit from this revolutionary new Timken Axle development. It's the *final answer* to *final drive problems.*

Here's the Story, Briefly Told!

The complete new line of Timken "3 for 1" Axles, in a complete range of capacities and ratios, for medium, light heavy, and heavy-duty service, is in full production NOW.

In every Timken "3 for 1" Axle you get your choice of *three* final drives—(1) Hypoid; (2) Hypoid-Helical Double Reduction; (3) Two-Speed Hypoid-Helical Double-Reduction with Timken Easy-Power Shift. All three types of final drives in each capacity are interchangeable in the same rugged Timken axle housing, using the same axle shafts.

Consider What It Means to You!

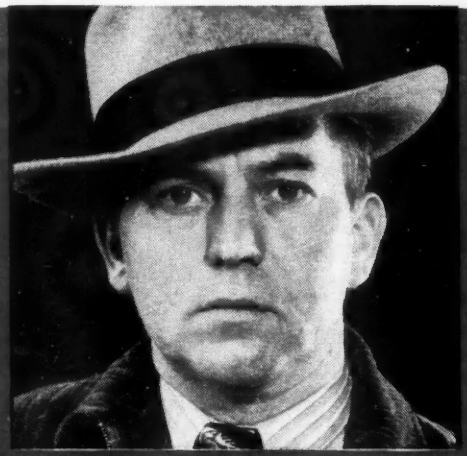
NOW, when buying a truck, you can specify the type of final drive that best meets your job requirements. You can benefit from more efficient truck performance and longer life.

NEW TIMKEN *3 for 1* AXLES

to final drive problems!



CHARLES A. DENTON, MECHANIC:
"The right final drive, the right axle ratio, are big helps in keeping maintenance costs down. Hypoid's a big help, too. It provides larger, stronger pinions and bearings."



JOSEPH M. STUEBBEN, SUPERINTENDENT:
"Buying the right vehicles is important. A wide range of capacities and gear ratios and three types of final drive, interchangeable in the same axle housing, are big forward steps."



W. L. SMITH, COMPTROLLER:
"I'm no authority on trucks. But I do know anything that helps fit a truck to the job will cut costs and increase profits. That's what my books show."

NOW, if your job requirements change, you can change to a different type of final drive using the same axle housing and the same axle shafts.

NOW, when you trade in a Timken "3 for 1" axle-equipped truck, you can get more for it, for this interchangeability of final drives is an advantage every operator will want.

In short, here is what you have always wanted—the ability to choose the truck that fits your job exactly—*without final drive compromise or substitution.*

Act now! Get all the facts on the new Timken "3 for 1" Axles! Then specify "3 for 1" axles under the next new trucks you buy!

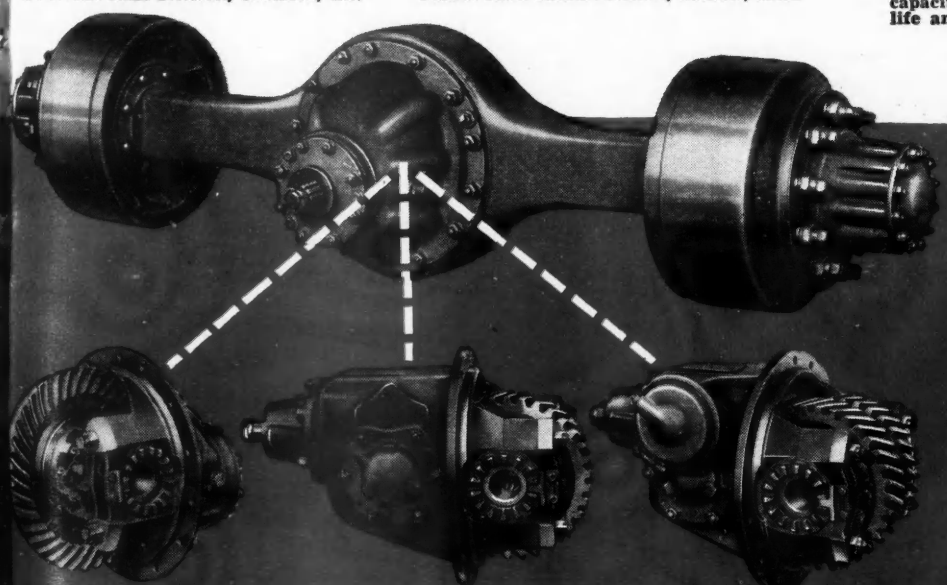
THE TIMKEN-DETROIT AXLE COMPANY

DETROIT 32, MICHIGAN

WISCONSIN AXLE DIVISION, OSHKOSH, WIS. **TIMKEN AXLE BRAKE DIVISION, DETROIT, MICH.**



Timken offers for the first time the *full* advantages of Hypoid Gearing in a complete line of axles: a wider range of gear ratios . . . increased torque capacity . . . sturdier gear mounting . . . longer life and increased dependability.



Hypoid Gear

Hypoid-Helical Double-Reduction

2-Speed Hypoid-Helical Double-Reduction

1. **Seven new related series of axles, providing a complete range of capacities for all medium, light-heavy and heavy-duty requirements.**
2. **Three optional types of final drive in each capacity, each interchangeable in the same axle housing using the same axle shafts.**
3. **A wide range of optional final drive gear ratios.**
4. **New Advanced-Related Design, with exclusive Timken Hypoid "Hy-Performance" Gearing throughout the entire line.**

Here's A Complete, Up-To-Date

Engine Repair Manual



Includes 108 Pages on Heavy-Duty Truck and Bus Engines

●AT LAST, a complete, authoritative, up-to-the-minute Engine Repair Manual to help your shop do better, faster engine repair jobs! Loaded with useful information on piston rings, pistons, valves, bearings, and everything else that affects oil consumption, fuel consumption, and power. Includes clearance tables and adjustments recommended by the manufacturers, along with trouble-shooting charts and other data to make repair work easier and more accurate.

All types of vehicle engines are covered in detail, including passenger cars, trucks and buses (both gasoline and Diesel)—even tractor engines. In fact, this is the *first* Piston Ring Manual in which a special section is devoted to Heavy-Duty Truck and Bus Engines. This section of 108 pages includes G.M.C., International Harvester, Mack, Hercules, White, Cummins Diesel, Hall-Scott, Autocar, Waukesha, and all the other popular makes.

As a further service to engine repair shops, Pedrick provides special Service Bulletins to keep the Manual up-to-date. These Bulletins pass along information on new models, current developments in the field, and anything else that Pedrick thinks may be helpful to maintenance men.

Pedrick was the first piston ring company to supply this type of information, and the new Engine Repair Manual is the latest edition of a service that started back in 1933. Ask your distributor how you become a Pedrick Franchise Shop and get this helpful information service. Or write direct to WILKENING MANUFACTURING CO., Philadelphia 42, Pa. *In Canada:* Wilkening Manufacturing Co. (Canada) Ltd., Toronto.



Pedrick

"HEAT-SHAPED" PISTON RINGS



When engines act up

TUNE UP WITH MOTOR RYTHM

HERE'S THE WAY to get more service out of every unit in your fleet! When any engine acts up, pour MOTOR RYTHM through the carburetor and watch carbon, gum, and varnish disappear in a cloud of exhaust smoke! MOTOR RYTHM cleans out harmful, power-wasting deposits the modern, safe, *chemical* way. It helps keep your buses, trucks, and passenger cars out of the shop and on the road . . . cuts operating and maintenance costs.

Make MOTOR RYTHM a *must* in your maintenance routine! Pour it through the carburetor for a quick, *safe* chemical tune-up . . . add it to the crankcase with each oil change to *keep* engines clean inside . . . use it to break-in *new* and rebuilt engines. MOTOR RYTHM is recommended for use with all motor oils, including the new compounded and detergent types.

R. M. Hollingshead Corporation, Camden, New Jersey; Toronto, Canada. Warehouses: Dallas, San Francisco, Chicago.

A PRODUCT OF

Whiz *Hollingshead*

LEADER IN MAINTENANCE CHEMICALS

OTHER ESSENTIAL MAINTENANCE CHEMICALS:



WHIZ LOOSEN-ALL
A few drops frees stubborn nuts, bolts; frozen valves, pistons, cylinder heads. Loosens parts seized by rust, scale, corrosion, red or white lead, paint, shellac, carbon, gum. Saves time and labor.

WHIZ HO-ZOF
Safely removes grease, oil, and grime from motors, tools, motor parts, floors. Creates no inflammable, noxious fumes. Makes it easy to remove accumulations of grease, oil, grime.

WHIZ DIP-ZOF
The modern, *chemical* way to clean carburetors and other small metal parts. A cold immersion cleaner that quickly removes grease, sludge, carbon, gum, varnish, paint, ethyl stain without scraping.

WHIZ BRAKE FLUID
For all hydraulic brakes. Assures smooth, safe stops in any climate — from 50° below to 250° above zero. Will not evaporate, rot, or swell rubber. Noninjurious to any part of the braking system.

"S-M-O-O-T-H and E-A-S-Y..

That's What I Like About HYDRO*MASTERS by ROADMASTER and with STOP-SAFETY I Can Make TOP TIME"



"Sure HYDRO*MASTERS give me the *quick, non-fading power* to stop when we've *got to stop.* I can always count on *that* . . . but what I like most about HYDRO*MASTERS is the 'smooth as silk' braking they give me on the routine slow-downs and stops we make hundreds of times on every trip . . . those soft-smooth, non-grabbing stops I make with e-a-s-y pedal pressure.

"Plenty of smooth, easy, safe Stopping Power—and the driver doesn't have to kick his leg off—that's HYDRO*MASTER!"

★ ★ ★

In years of prewar, war and postwar engineering, Roadmaster has learned how to bring any truck, trailer or bus, loaded or not, to a smoothly graduated stop—without chattering, grabbing or "flat-tiring".

The answer is HYDRO*MASTER Reciprocating Hydraulic Brake Controls. HYDRO*MASTERS smoothly multiply pedal power up to any brake-drum pressure your load and road call for. Just cut HYDRO*MASTER into the hydraulic line and let it take over . . . no adjusting or lubricating.

ROADMASTER PRODUCTS CO.

2316 South Flower Street
Los Angeles 7, California

Center and Chestnut Streets
Valparaiso, Indiana

ROADMASTER
POWER BRAKE CONTROLS

This revolutionary new improvement in commercial vehicle brake control is of vital dollar-saving interest to all commercial vehicle manufacturers, operators and drivers—and to brake equipment distributors and service men who want a top-notch profit line.

Distributorships still available in several important cities. Write for full information today.

THESE AUTOCARS MUST BE DOUBLY PROFITABLE

These Grunstein Autocars are a part of the big fleet owned by John J. Casale, a leading truck renter of New York City. Only a motor truck that can operate extra profitably can be used for truck-rental work, for not only must it be able to deliver economically for the renter, but it must also show a profit for the owner. Autocars qualify for this work because they are good trucks, expertly serviced. They cost less, because they do more work.

AUTOCAR TRUCKS

ENGINEERED FOR HEAVY DUTY

Manufactured in Ardmore, Pa. · Factory Branches and Distributors in Principal Cities



DETROIT PUBLIC LIBRARY

SERVING THROUGH SCIENCE



UNITED STATES

1230 AVENUE OF THE AMERICAS

Built to give you MORE RECAPS!

THE GREAT U. S. ROYAL FLEETWAY

MORE RUGGEDNESS. Not only does exclusive *Safety Bonded Cord construction* give the Fleetway greater strength and longer life . . . but two extra cord plies under the tread guard against sudden impacts, while "Ventilating Windows" prevent extreme heat build-up on long hauls.

MORE QUALITY. From its tough tread stock to its rugged body that *fights back* against shocks and bruises, the Fleetway is built with the top-flight quality that makes *all* U. S. Royals so safe, so durable, so *reliable*.

MORE MILEAGE. In every respect, the U. S. Royal Fleetway is designed and engineered for long, mile-eating service. And because of the extra strength under its tread it can be recapped again and again . . . adding even *more* miles to its useful life.

MORE RECAPS *mean more mileage! That's why the U. S. Royal Fleetway gives you many MORE miles—at lower cost PER mile!*

GIVES YOU MORE MILES PER TIRE—LESS COST PER MILE

U. S. ROYAL *Fleetway*

TWO MORE WAYS TO GET LONGER MILEAGE AT LOWER COST

USCAP for Quality Recaps

USCAP is the exclusive "U. S." controlled system of recapping—developed by "U. S." for *better*, longer-running recaps.

Fleet Service for Extra Miles

By placing all the facilities of the U. S. Fleet Service at your disposal, your U. S. Distributor gets more miles from *all* your tires.

RUBBER COMPANY

ROCKEFELLER CENTER • NEW YORK 20, N. Y.

. . . "so help me heads off with

WALKER DIDN'T WRITE THIS ADVERTISEMENT . . .
IT'S THE UNSOLICITED APPRECIATION OF A
SATISFIED* Super *KWICK USER



EASY AND PLEASANT TO USE

CONTAINS NO KEROSENE, ETHER,

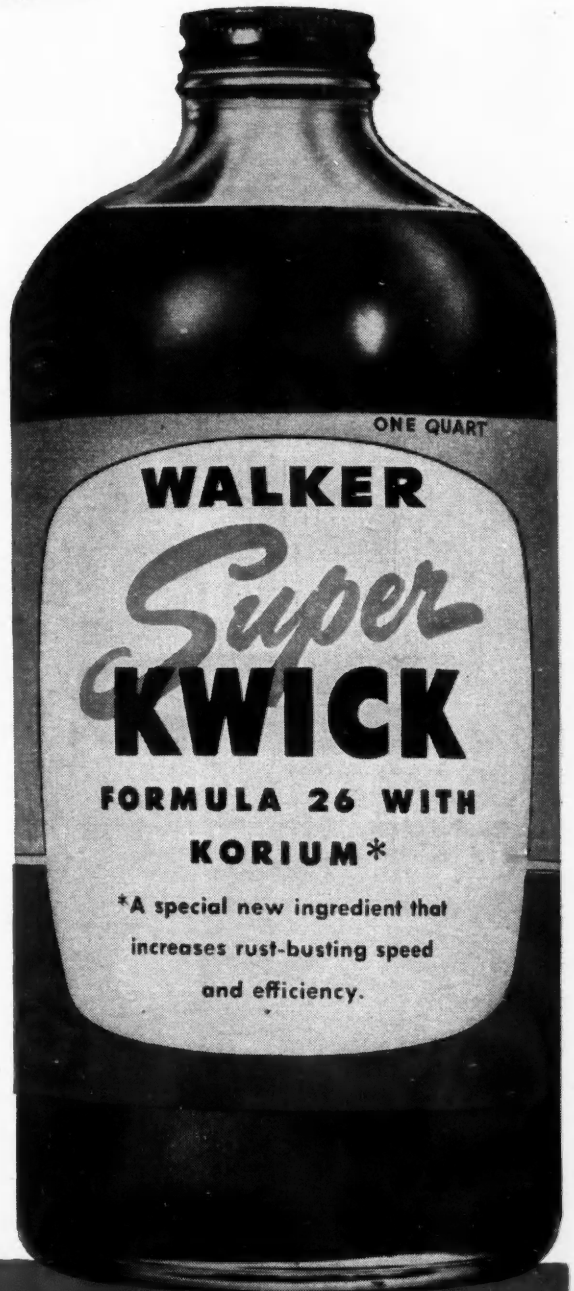
WALKER MANUFACTURING COMPANY

I pulled those my bare hands!"

"Just saw your advertisement about *Super* KWICK. Gentlemen, that is one product that needs no advertising. Yesterday I had a 1935 Ford to replace the head gaskets. It had aluminum heads and they were corroded on so bad that the head pullers we use would not even loosen them.

"I had one bottle of *Super* KWICK that I bought while on my vacation. I put a few drops on each stud and let it set for 20 minutes and *so help me, I pulled those heads off with my bare hands.* I wish I could tell you how much I appreciate having *Super* KWICK on hand at all times."

P.S. **(by Walker) You, too, will appreciate having *Super* KWICK on hand at all times. *Get yours today!***



A New Super-Fast RUST BUSTING COMPOUND by WALKER

FOR EVERY AUTOMOTIVE, INDUSTRIAL AND AGRICULTURAL USE

. . . NO OBJECTIONABLE ODOR

ALCOHOL OR HARMFUL ACIDS

OF WISCONSIN • RACINE, WISCONSIN

SELL AN AIRTEX GASOLINE FILTER-DAMPER with EVERY CARBURETOR or FUEL PUMP JOB!



MOTORIST: I think it's my carburetor.

YOU: Yes. The needle valve is leaking. A low cost AIRTEX Gasoline Filter with Pulsation DAMPER would have prevented this trouble and expense.



MOTORIST: Why? What does the DAMPER do?

YOU: The AIRTEX Pulsation DAMPER suppresses pressure pulsations in the flow of gasoline from fuel pump to carburetor and delivers a smooth, even-flowing supply of FILTERED GASOLINE.



MOTORIST: What difference does that make?

YOU: Saves wear and tear on the carburetor, insures its long life and accurate performance, reduces strain on fuel pump diaphragm and other parts, and promotes smoother engine operation.

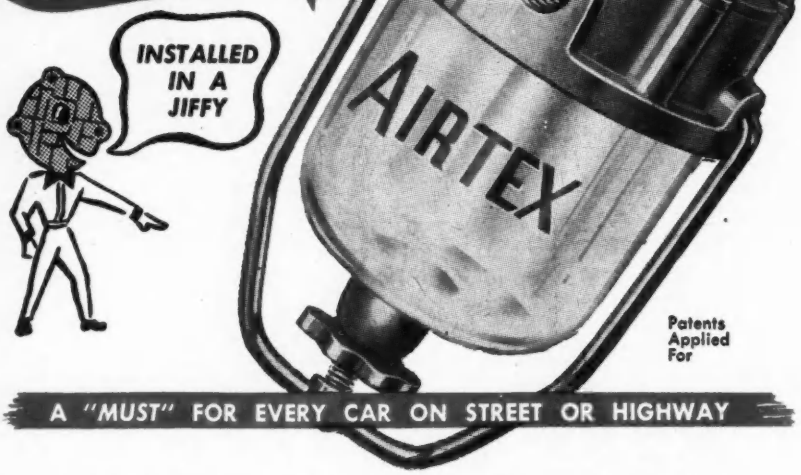
MOTORIST: O.K.! Put in the new needle valve and *install an AIRTEX gasoline filter.*

No Car or Truck should be without this Revolutionary—

AIRTEX

GASOLINE FILTER

with Pulsation DAMPER



A "MUST" FOR EVERY CAR ON STREET OR HIGHWAY

- Acts as a shock absorber in the fuel line, overcoming fuel pump pressure pulsations and delivering an EVEN, SMOOTH FLOW OF FUEL to the carburetor.
- Removes dirt, lint, water, abrasive particles and other foreign matter from the gasoline.
- Prevents motor failure due to carburetor clogging and flooding. Reduces wear and tear on carburetor, motor and fuel pump.
- The only filter equipped with *PULSATION* DAMPER, self-cleaning action and porous metal filtering element.

Attractive Display Assortment of 12 Filter-Dampers Available

Contains 5 types that will service 90% of motor vehicles

AIRTEX AUTOMOTIVE DIVISION

Chefford Master Mfg. Co., Inc. • Fairfield, Illinois

Sell AIRTEX Fuel Pumps, equipped with 50,000 Mile Guaranteed Diaphragms

ANNOUNCING



A NEW SERIES *by* OSHKOSH

The new W-2200 Series of advanced 4-Wheel Drive trucks is designed especially for heavy duty snow removal, logging and general heavy hauling — where maximum traction and floatation are desired.

Models in this series are available with either gasoline or diesel power. Gross ratings range from 40,000 to 44,000 lbs. and tires are 13:00 x 20 to 14:00 x 24 duals.

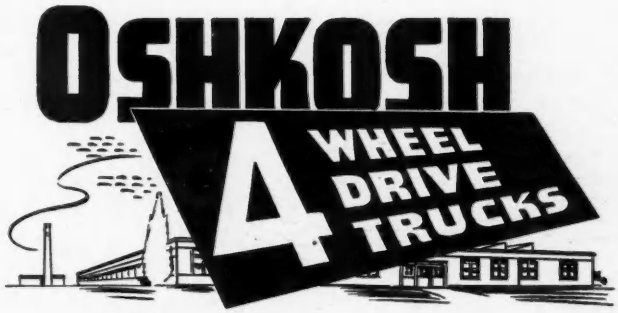
Not only are they efficient and economical in operation, but hydraulic power steering and other convenient control features make them exceptionally easy to handle.

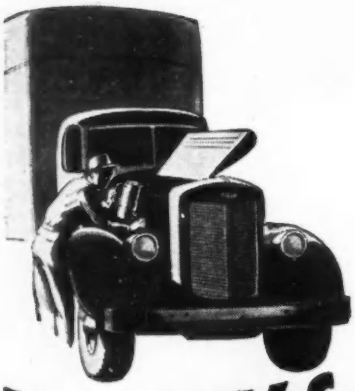
Other models available from 23,000 to 95,000 lbs. gross vehicle weight.

SERVICE STATIONS LOCATED AT CONVENIENT POINTS THROUGHOUT THE U. S.

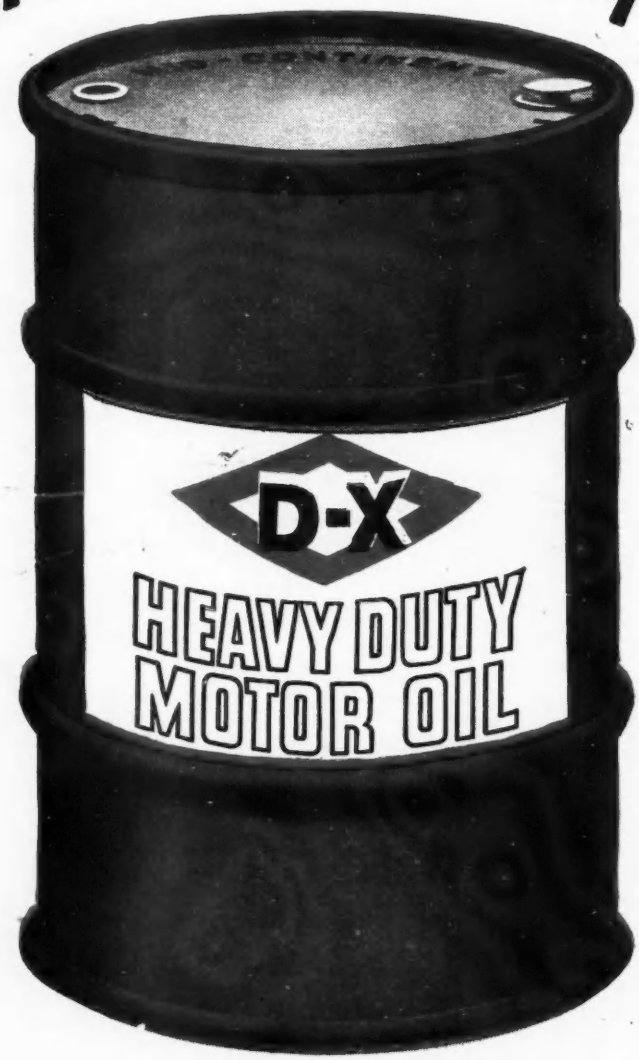
Write for descriptive literature.

OSHKOSH MOTOR TRUCK INC.
OSHKOSH, WISCONSIN
CABLE ADDRESS: "OSHMOTOR" OSHKOSH





Use D-X for a Wider Margin of Safety



D-X Heavy Duty Motor Oil possesses all the essential properties for safer operation in heavy duty service, in addition to being solvent-processed, with high heat resistance. *Extra* safety properties include:

- ★ **HIGH FILM STRENGTH** (reduces wear—adds longer motor life)
- ★ **HIGH DETERGENCY** (exerts constant cleansing action in engine)
- ★ **SLUDGE PREVENTION** (retards formation of harmful deposits)
- ★ **DISPERSION** (holds disintegrated foreign matter in harmless suspension)
- ★ **RESISTANCE TO OXIDATION** (protects bearings against corrosion)
- ★ **RESISTANCE TO FOAMING** (to prevent reduction of lubricating qualities)

SEND FOR FREE FOLDER explaining all the advantages of D-X Heavy Duty Motor Oil.

For light trucks, commercial cars
D-X MOTOR OIL

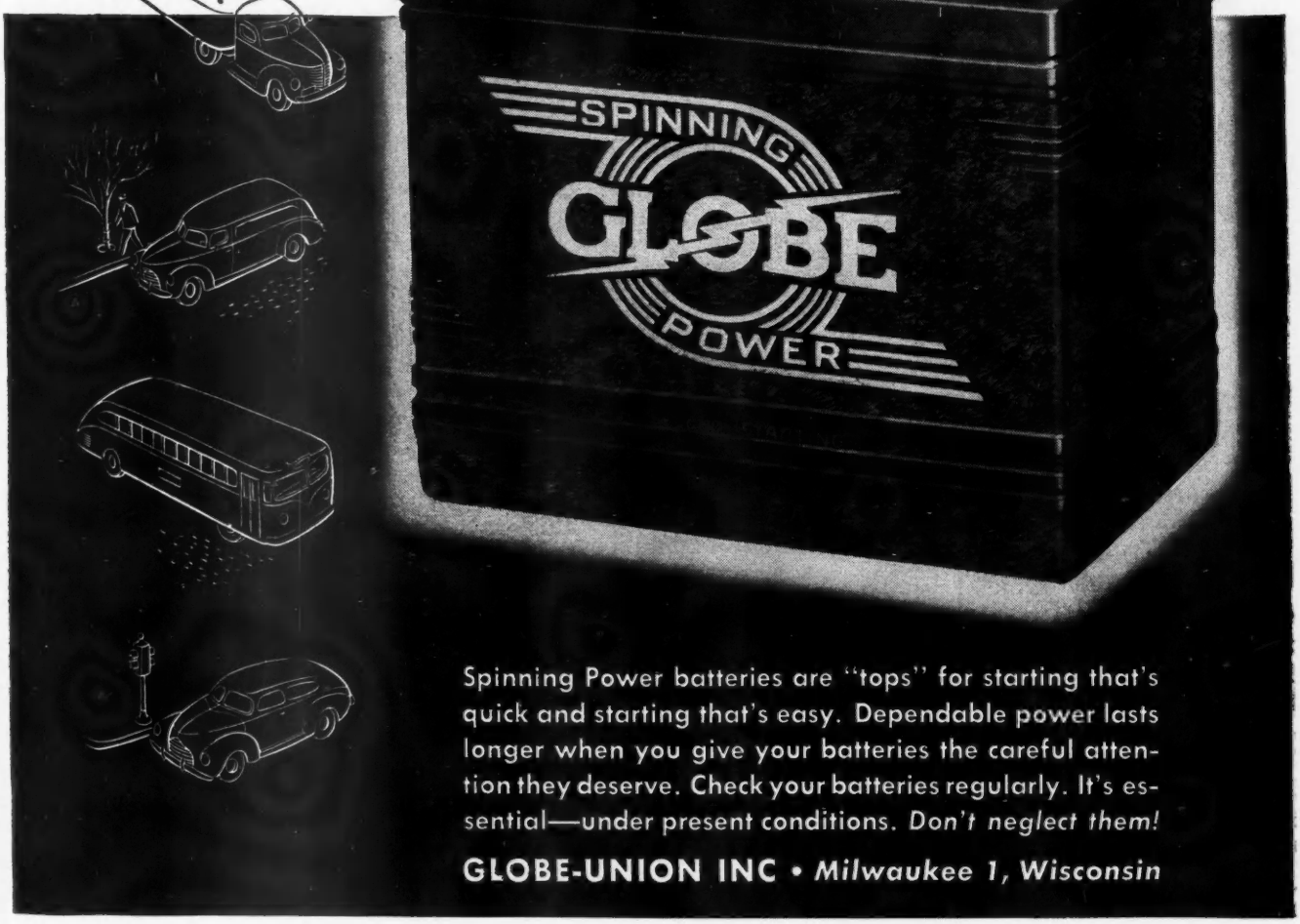
For All Diesel Engines
D-X DIESEL MOTOR OIL

MID-CONTINENT PETROLEUM CORPORATION

Waterloo, Iowa Terre Haute, Ind. TULSA, OKLA. Chicago Omaha

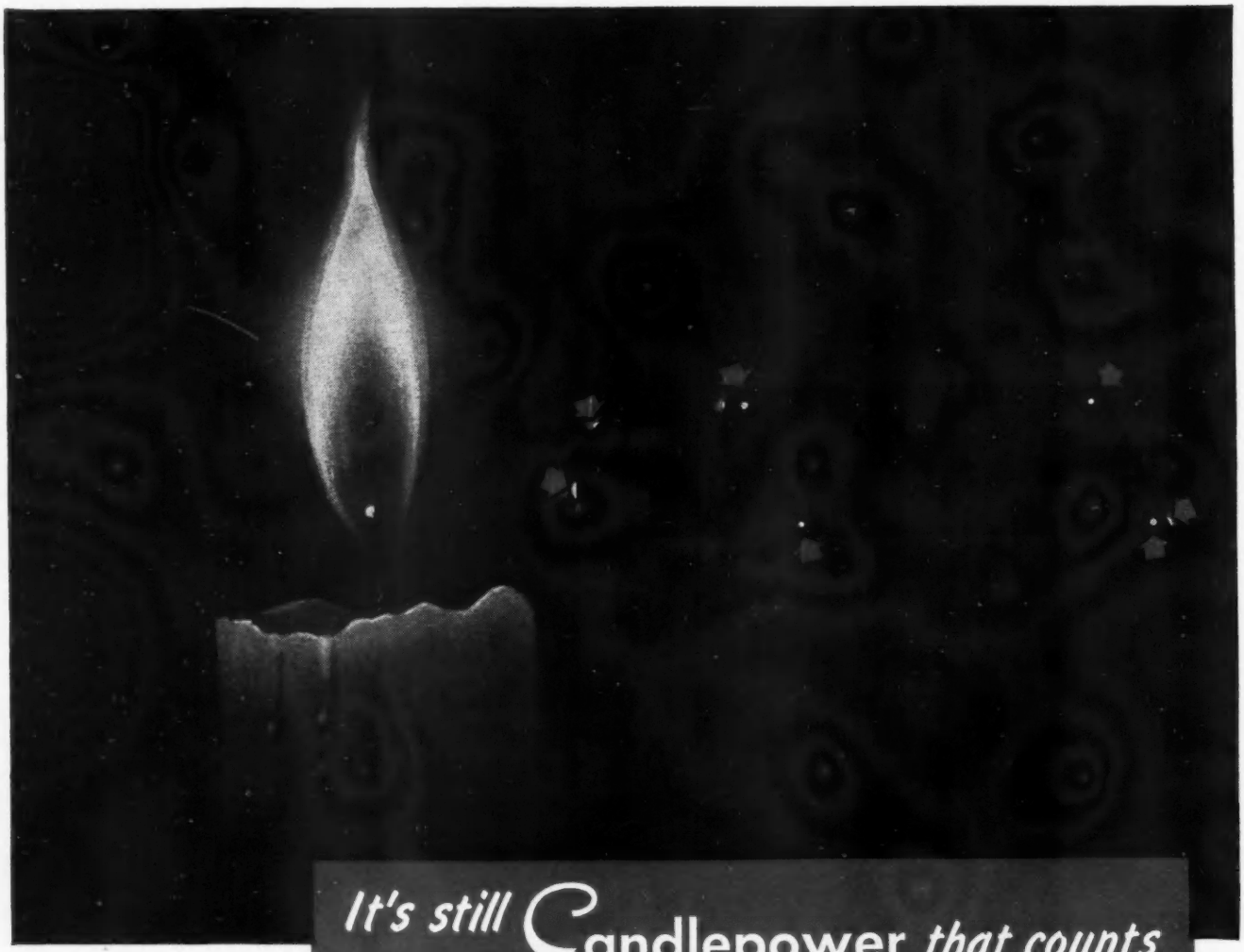
SPINNING POWER

GLOBE-UNION



Spinning Power batteries are "tops" for starting that's quick and starting that's easy. Dependable power lasts longer when you give your batteries the careful attention they deserve. Check your batteries regularly. It's essential—under present conditions. *Don't neglect them!*

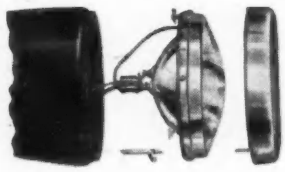
GLOBE-UNION INC • *Milwaukee 1, Wisconsin*



It's still Candlepower *that counts*



Model No. 39
ARROW STREAMLINED
MARKER LAMP



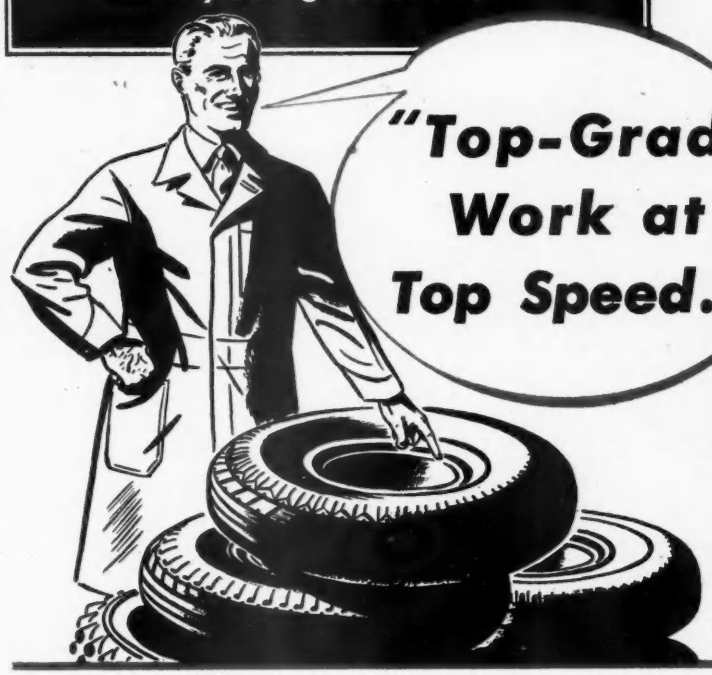
Model No. 791
ARROW SEALED-BEAM
REPLACEMENT KIT

SAFETY ARROW DEVICES

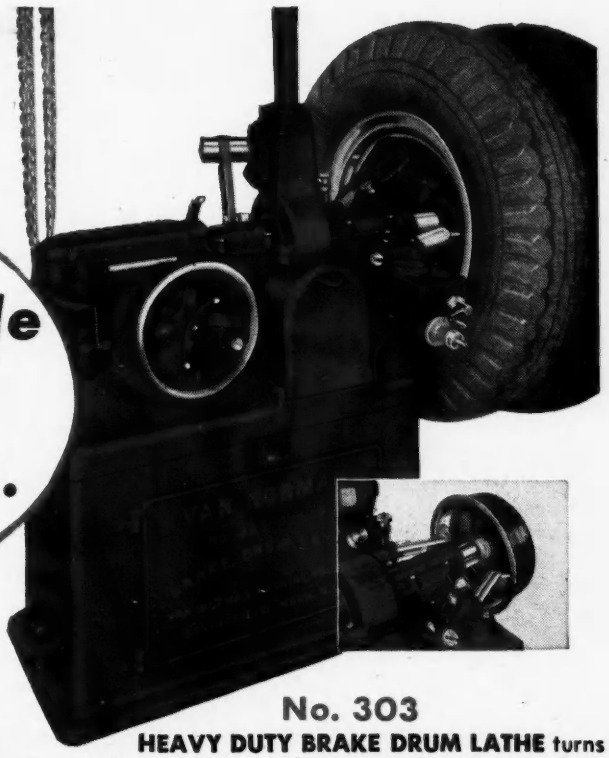
Candles and horses are not standard equipment for today's vehicles, but candlepower is as necessary as horsepower for the successful operation of America's vast modern transportation system. Our business is to package candlepower and put it to work for you. Arrow headlights, marker lights, fog lights, tail lights, directional signals, reflectors and flares are designed to meet every traffic requirement. They are designed, as well, for long-lasting performance. Let Arrow be your guide for greater SAFETY AFTER DARK.

ARROW SAFETY DEVICE COMPANY, MT. HOLLY, N. J.
SAFETY AFTER DARK

On all Brake Drums and Shoes
A VAN NORMAN JOB
is your guarantee!



"Top-Grade Work at Top Speed.."

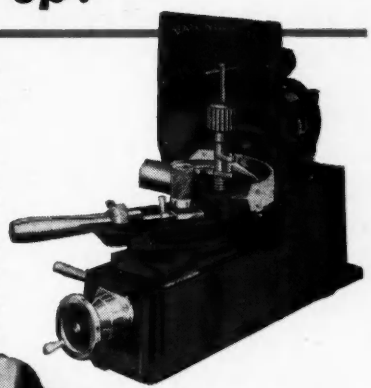


No. 303
HEAVY DUTY BRAKE DRUM LATHE turns and grinds at same time. Exclusive independent grinder. Speeds and feeds to take all drums and drum-materials. Sliding and rotating spindle.

...that's why I MAKE MORE MONEY on this COMPLETE VAN NORMAN set-up!"

Up-and-coming brake service shops and brake-shoe exchange distributors know now's the time to equip for profit. And they know that the best equipment they can buy is the least expensive factor in their whole business set-up.
That's why so many of them are installing Van Norman Brake Service Machines. Built in one of the largest precision machine-tool plants, these machines are "built to take it" . . . to keep output up and upkeep down. See your jobber about this Van Norman set-up *for yourself*, or have him Van Normanize your work until you're ready to buy. Van Norman Company, Springfield 7, Mass.





No. 333
BRAKE DRUM LATHE FOR CAR & LIGHT TRUCK DRUMS up to 1½-ton size, with duals mounted. Heavy duty grinder attachment is available and recommended.



NEW No. 350
BRAKE SHOE BURNISHER handles shoes 16" x 4", and microsizes each shoe to the drum. Exclusive instant location, center or off-center.

NEW No. 370
BRAKE SHOE WASHER for shoes, BK Booster Units, small metal parts. Parts come out dry and ready to use . . . *saving* ¼ the usual cleaning time.

The Best-Equipped Shop Gets the Business!

that's why *"It Pays to Van Normanize"*

Only WARNER ELECTRIC BRAKES

Give you *all* these Time-and-Money-Saving Advantages

Engineered to meet the Specific Needs of Trailer Braking

SIMPLICITY— No other brakes equal Warner Electric Brakes for simplicity of design and construction. Full clearance under tractor and trailer. Nothing to get knocked off, leak, chatter or freeze. No exposed braking equipment . . . no rods to rattle . . . no tubes to split . . . no troublesome boosters and connections. Easy to install . . . no tapping of manifolds . . . no expensive motor work.

INSTANTANEOUS, POSITIVE ACTION— Positive-acting braking power is developed within the brake itself. Because the braking mechanism is *electrically controlled,* there is no time lag. Regardless of distances from cab to rear trailer wheels, any amount of stopping power is *instantly available.*

CONTROLLED BRAKING POWER — Driver can pre-set the "Vari-Load" dial on dash so it adjusts the electric brakes on the trailer to give correct braking to meet road and load conditions.

SYNCHRONIZED OPERATION WITH EITHER AIR OR HYDRAULIC SYSTEMS— Warner Controller synchronizes hydraulic or air brakes on tractor with Electric Brakes on trailer. Regular tractor foot pedal then operates both systems *together.*

ALL-PURPOSE CONNECTION — One rugged Electrical Cable Connection provides contacts for Brakes, Running and Parking Lights, Stop and Turn Signals—ALL electrical contacts. As easy to plug in as a radio.

UNMATCHED ECONOMY— Warner Electric Brakes are inexpensive to install due to their simplicity. Use only as much current as tail light. The most important economy factor is that they require minimum of servicing thus preventing costly delays and tie-ups of trailer equipment.

PROVED DEPENDABILITY — Warner Electric Brakes have been performance-proved by leading tractor-trailer fleet operators during many years of efficient, trouble-free service — also on thousands of military vehicles. It is noteworthy that 80% of all power-brake equipped trailing vehicles purchased by the government during World War II — had Warner equipment.

GREATER SAFETY— When both the tractor and trailer are equipped with Warner Electric Brakes their *instant* "stopping power" under *absolute control* assures greater safety. All brakes "come in" at the same time, but with various *amounts* of power. Therefore, rear trailer wheels get the effect of coming in first — and the tendency to skid or jack-knife is prevented, thus giving protection to driver and load — and avoiding costly repairs and tie-ups of equipment.

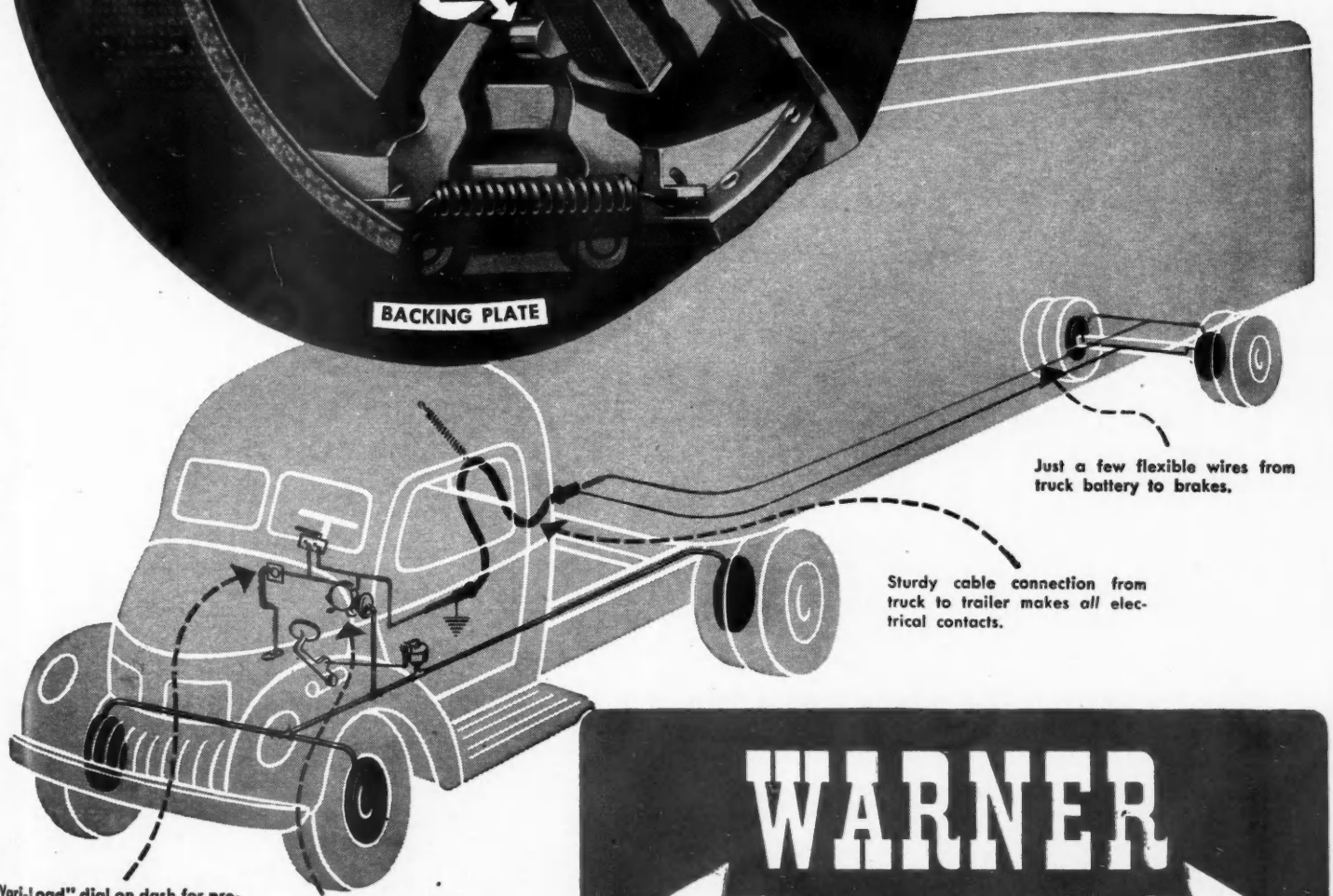
Specify WARNER ELECTRIC BRAKES on all future trailer purchases. Write for illustrated literature explaining all their advantages.

WARNER ELECTRIC BRAKE MFG. COMPANY
BELOIT, WISCONSIN

Specialists in the manufacture of Electric Trailer Brakes since 1927



The Warner Electric Brake is a simple mechanical brake, operated by an electro-magnet and armature disc. Each wheel is a complete brake unit. The braking power is generated within the brake itself. A wire to the battery and a controller complete the system — famous for its simplicity.



Just a few flexible wires from truck battery to brakes.

Sturdy cable connection from truck to trailer makes *all* electrical contacts.

"Vari-Load" dial on dash for pre-setting correct braking power.

Controller operates trailer's electric brakes *in unison* with truck's hydraulic or air brakes.

WARNER
ELECTRIC BRAKES

Shaping up More Mileage for Your Fleet

● It's a bright future he's shaping for you—filled with more revenue miles, smoother operation, fewer costly delays.

The reason? He's shaping a tough new Kelly—the tire that's been known since trucks were born as the "*trucker's tire*"!

Records kept by many fleet operators bear out that statement. They prove in black and white that tough Kellys pay off in dependable service, help meet busy schedules on time.

Today's new Kelly is the best yet. Its sturdy body, made of tightly twisted rayon cord insulated with *extra natural rubber*, minimizes heat and friction. And Kelly's Armorubber tread compound is so tough, it actually outwears *steel*.

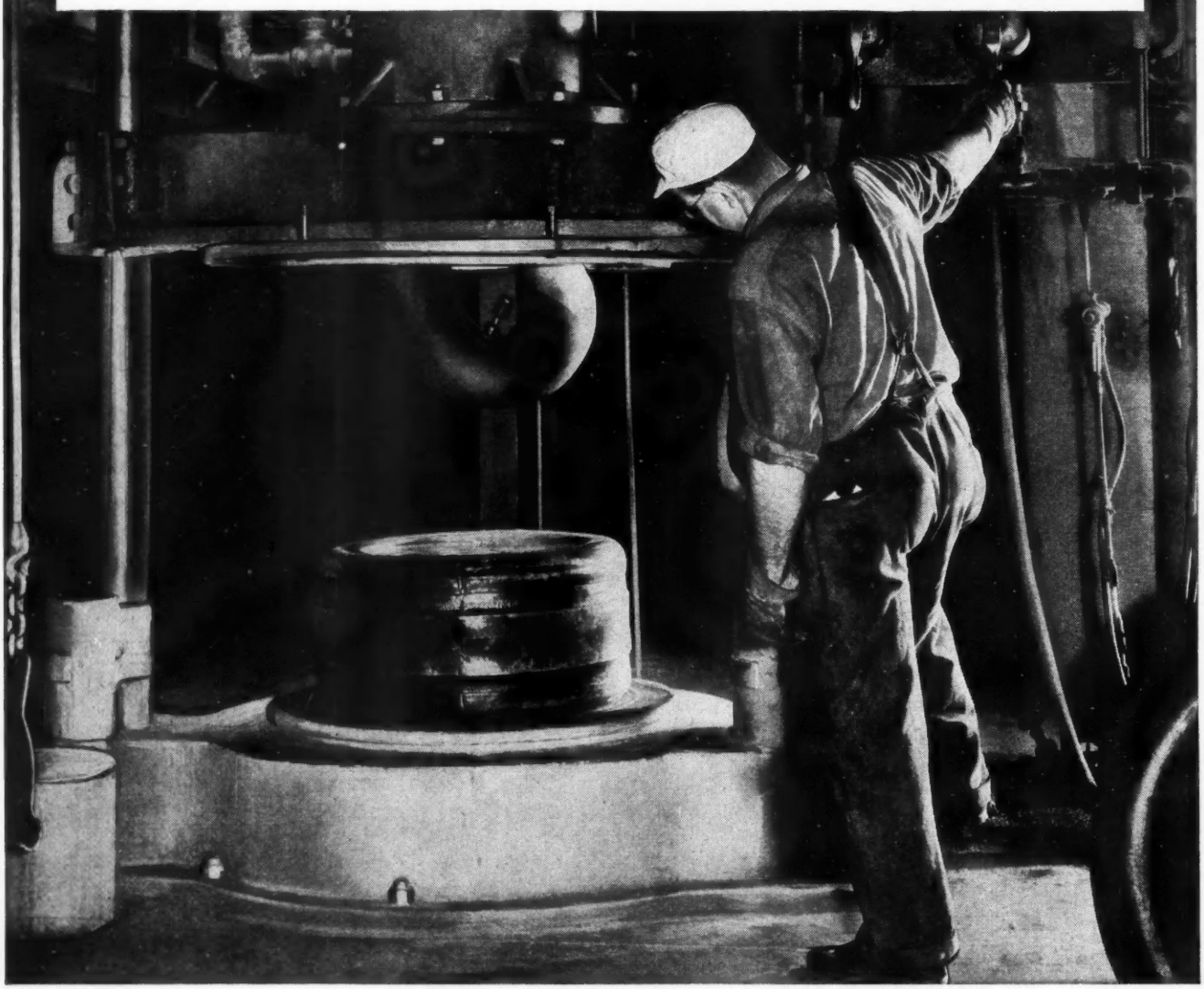
Match the new Kelly against any other tire. See for yourself what truckers mean when they say, "Kellys are built to last!"

KELLYS ARE TOUGH!

KELLY Springfield TIRES



THE KELLY-SPRINGFIELD TIRE COMPANY, Cumberland, Maryland



COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

Reg. U. S. Pat. Off. Published monthly Member C.C.A.
Acceptance under the Act of June 5, 1934, authorized December 18, 1934

LXXIII Philadelphia, March, 1947 No. 1

JULIAN CHASE, Vice-Pres. and Directing Editor
GEORGE T. HOOK, Editor
A. W. GREENE, Managing Editor
CHARLES B. RAWSON, Associate Editor
M. K. SIMKINS, Technical Editor
JOHN C. HILDRETH, JR., Research Editor
JOSEPH GESCHELIN, Detroit Technical Editor
LEONARD WESTRATE, Detroit News Editor
MARCUS AINSWORTH, Statistician
HOWARD KOHLBRENNER, Art Director
L. W. MOFFETT, EUGENE J. HARDY, KARL RANNELLS
Washington News Editors

EDITORIAL CONTENTS

Copyright 1947 by Chilton Company (Inc.)

CCJ Reader Digest 35

FEATURE ARTICLES

Mufflers Must be Muffled 36
27 Factors Affect Premature Tire Wear 39
Production Line Methods 40
Economics of Vehicle Replacement 46
Trouble Shooting Air Brake Troubles 49
Beautiful Bodies, What it Takes to Have Them 54
Dynamometer Dividends 60
IHC Point System 63
Protective Undercoaters 68
Federal's '47 Line 70
Associated's Heavy Maintenance Shops 72
Unusual Generator 74

DEPARTMENTS

Detroit Dispatch 33
Ears to the Ground ... 34
The Overload 43
Shop and Salvage Hints 44
Laugh It Off 53
Free Publications 56
New Products 57
CCJ Quiz 64
New Truck Registrations 76
CCJ Newscast 78
Washington Runaround 86
Truck Specifications .. 93
Fleetman's Library 230

G. C. BUZBY, President and Manager, Automotive Division
E. W. HEVNER, Cir. Mgr. E. H. MILLER, Adv. Mgr.

REGIONAL BUSINESS MANAGERS
RUSSELL W. CASE, JR., Philadelphia A. R. ECKEL, New York City
E. E. ELDER, Detroit J. A. LAANSMA, Detroit
JOHN C. HILDRETH, Cleveland
F. O. KIRKPATRICK, Chicago HARRY T. LANE, Chicago
C. H. WOOLEY, San Francisco AUGUST HAURIN, JR., Los Angeles

OFFICES
Philadelphia 39, Pa.—Chestnut & 56th Sts., Phone Sherwood 7-1424
New York 17, N. Y.—100 E. 42nd St., Phone Murray Hill 5-8600
Chicago 1, Ill.—Rm. 916 London Guar. & Accident Bldg., Ph. Franklin 4343
Detroit 2, Mich.—1015 Stephenson Bldg., Phone Madison 2090
Cleveland 14, Ohio—1030 Guardian Bldg., Phone Cherry 4188
Washington 4, D. C.—1061 National Press Bldg., Phone District 8110
San Francisco 5, Cal.—605 Market St., Rm. 608, Phone Sutter 4951
Los Angeles 1, Calif.—6000 Miramonte Blvd., Phone Lafayette 5525

SUBSCRIPTION RATES: United States and United States Possessions and all Latin-American countries—$5.00 per year. Canada and Foreign—$10.00 per year. Single copies—50 cents. April issue, $1.00.

Owned and Published by
CHILTON COMPANY (INC.)

Executive Offices
Chestnut and 56th Streets, Philadelphia 39, Pa., U. S. A.

Officers and Directors
Jos. S. HILDRETH, *President*

Vice-Presidents
EVERIT B. TERHUNE P. M. FAHRENDORF JULIAN CHASE
THOMAS L. KANE G. C. BUZBY CHARLES J. HEALE
WILLIAM A. BARBER, *Treasurer* JOHN BLAIR MOFFETT, *Secretary*
HARRY V. DUFFY T. W. LIPPERT FRED V. COLE

WILLIAM H. VALLAR, *Asst. Treas.*

PAUL WOOTON, *Washington Member of the Editorial Board*



Model 47-7
St.Paul Hoist
with 3-4 yd.
BR body and
½ cab shield

A ST.PAUL "LIGHT DUTY" UNIT

...But look at the way it's

BUILT!

Whether for handling iron ore, asphalt or ashes all St.Paul dump units are built with an extra measure of emergency strength.

To the operator this extra strength means more productive time with greater profits . . . yes and extra years of service long after the initial cost is repaid.

ST.PAUL HYDRAULIC HOIST DIVISION
GAR WOOD INDUSTRIES, INC.
2207 University Avenue S. E.
MINNEAPOLIS 14, MINNESOTA



For 16 years more heavy-duty International Trucks have served American commerce and industry than any other make.

Now come *new* KB Models—light-duty, medium-duty and heavy duty—with gross vehicle weight ratings from 4,400 to 35,100 pounds. Note the designation—KB.

That means many features and improvements . . . new goals in engineering, research, and design . . . new styling with trim, flowing lines accented by gleaming chrome.

And that means rugged International stamina, long, trouble-free life, and ease and economy of operation in greater abundance than ever before.

Yes, KB Internationals are the finest trucks in 40 years of International Truck history. In the complete line is the right truck for every job. And back of every truck is service as great as the trucks themselves, supplied by the nation's largest company-owned truck service organization—International Branches—and thousands of International Dealers.

Tune in James Melton on "Harvest of Stars" every Sunday! NBC Network. See newspaper for time and station.

Motor Truck Division
INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago 1, Illinois

INTERNATIONAL TRUCKS



DETROIT DISPATCH

Ford Larger Model Due Later . . . Chevrolet Pushing 1½ & 2-Ton Jobs . . . Pig Iron No. 1 Bottleneck . . . Buyers' Market Inklings . . . Trucks May Be First . . . Property Insurance Up 40%

by LEN WESTRATE
CCJ Detroit News Editor

Ford Larger Model Due Later

Ford's 2½-3 ton truck apparently is not scheduled for production for several months, yet, according to latest information. Its introduction probably will coincide with that of new truck models which Ford plans to come out with later this year. The new truck line is said to encompass some extensive changes, but details still are a top drawer secret.

Chevrolet Pushing 1½ & 2-Ton

Chevrolet has also set back the time of its introduction of new truck models and it now looks as though it will be about May. A spokesman for Chevrolet says that the division has no plans to come out with a competitive model to the Ford 2½-3 ton model. He also said that Chevrolet will catch up on the 1½ and 2-ton models first but that a large backlog of panel and pickup jobs still is on hand. The reason is that the latter category takes much more sheet steel with the result that production is concentrated on the larger models. As more steel becomes available for pick-up boxes and panel bodies, production of lighter trucks will pick up.

Exports Remain Stable

Lifting of export quotas on new trucks is not expected to result in any larger diversion of trucks from the American market than existed in 1946. Several manufacturers tell us that they expect the previous figure of about 20 per cent export to remain constant this year.

Pig Iron No. 1 Bottleneck

While steel has been getting all of the publicity as being the major shortage item, a scarcity of pig iron has been developing and now threatens to take over the No. 1 spot as automotive production bottleneck. Ford reports that its pig iron position is bad and getting progressively worse. The major trouble seems to be that OTC is allocating the supply to other industries, such as housing, in proportion far in excess of realistic needs. Automotive manufacturers are putting increasing pressure on Washington to alleviate the situation which threatens to become desperate in the second quarter of this year unless some action is taken. At present about 40 per cent of the merchant pig iron produced is being channeled into the housing program. Another difficulty is that with scrap prices up to $45 a ton, many steel producers are using pig iron instead of scrap in steel making.

. . . Trucks May Be First

A Dodge truck dealer reported that he expects to be out selling trucks in the larger sizes within the next 30 days although the market for pickups and panels, which have not been made in any quantity, still appears unlimited. Ford and Chevrolet truck people also predict that the market on larger sizes, especially, will be much freer in a few months than it is today. Truck production is booming along at a very high rate and does not seem to be affected nearly so much by supply difficulties as does passenger car output. There has not been any indication yet of a break in truck prices, but if supply and demand get more into balance, buyers should be in a much more favorable position to sharpen up their trading. In other words, prices will come down when that is necessary to move trucks off the dealers' floors.

Buyers' Market Inklings

There seems to be a lot of confusion about whether or not the buyers' market in automobiles is returning. Manufacturers point out huge backlogs of orders, but some dealers say that there is a softening apparent, especially in the high-priced lines. We made a survey in Detroit recently and discovered that, while the market still is quite firm on such lines as Ford, Chevrolet, and Plymouth, higher priced lines, particularly Hudson, Kaiser, and Frazer definitely have hit a soft spot. Dealers promised delivery of a Hudson in one or two weeks and K-F lines were available almost immediately. Willys also is running into price resistance. The largest distributor in Detroit recently cancelled out his Willys franchise with a statement that he thought the market here has been satisfied. Dealers also report that there is a definite trend toward more finance sales in the last couple of months. The real problem, of course, is that prices are too far out of line for mass buying.

Auto Show in '48

It seems to be pretty well established that passenger car manufacturers will resume the National Automobile Show next year. The next show, however, is not likely to be held in New York City as in the past, since the Grand Central Palace, traditional show site, is being taken over by the New York Central Railroad for office space. Our informant says that there is no other adequate facility in New York and that the show probably will be moved to the mid-West, possibly to Cleveland, Chicago, or even Detroit—although there would have to be some pretty fancy maneuvering for space in the motor city since at present there does not seem to be any suitable facility.

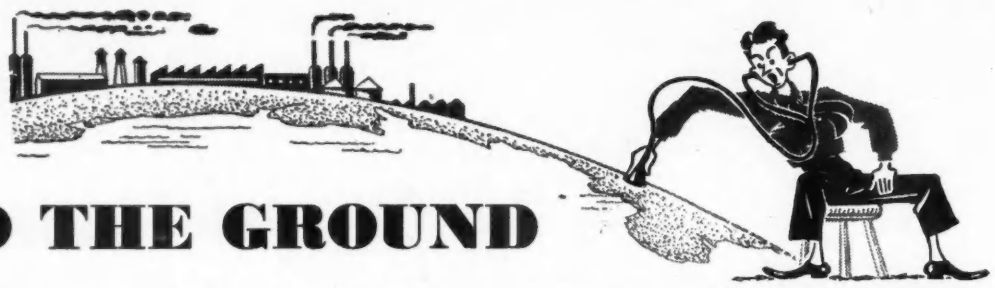
Property Insurance Up 40%

Fleet operators took another kick in the teeth during February when insurance premiums on property damage coverage for commercial vehicles shot up 40 per cent. The boost represents a sizable bulge in operating expenses and some fleet operators report it is going to affect their total profit noticeably.

Batteries to Remain Short

Automobile and truck batteries are going to stay in short supply until late this year, D. H. Kelly, exec. vice pres. of Electric Auto Lite Company, reports. He said that price of raw lead has skyrocketed since OPA controls were lifted and has gone from 8.25 cents per lb. to 13.65 cents. Since the average battery takes approximately 22½ lbs. of lead, the increase in price of materials alone is considerable.

(TURN TO NEXT PAGE, PLEASE)



EARS TO THE GROUND

Guess Who in One Guess

One of the largest of passenger car and truck producers has become interested in direct acting shock absorbers and doubtless will put them on as standard equipment very shortly.

Something to Drool About

A major bus operator is experimenting with a specially designed 6-cylinder, 150-hp., flat, aircooled engine mounted in the rear, using two engines for the installation. Engine design details are said to give a useful life of one-million miles on the road.

Signal from Dietz

Dietz, one of the oldest of lamp makers, is bringing out a full line of turn signals for motor trucks, buses and cars.

Revolutionary, They Claim

Claimed to be revolutionary is the Cleveland Graphite Clevite 77 precision bearing which, we understand, has been slated as standard equipment in engines made by some of the leading heavy-duty truck builders. It has an improved copper-lead matrix bonded to the steel back and coated with a soft bearing overlay consisting of an alloy of lead-tin-copper. Unique feature is that following the application of the copper-lead matrix, the bearing strip is processed through to completion as a machined bearing shell. Then it goes to the electroplating department where the soft overlay alloy is electrodeposited by a new precision process holding thickness to an exactly controlled value. It is then ready for installation in an engine without further machining.

Re Aluminum Bearings

Judging by what we hear the aluminum bearing for truck engines is still in the development stage. Some months ago it looked as if one or more bearing manufacturers would be ready with announcements of interest to fleetmen. But apparently such announcements can't be made for some time to come.

Heigho Horsepower!

This department has speculated quite a bit about Ford engines, which will be big news to fleetmen when they are officially announced. It now appears that there will be three displacements, giving 135, 145 and 160 hp. The big engine, as we have said before, is slated for the big new Ford truck.

Hot Tip on Cold Stuff

Now that the International Harvester Co. has a refrigeration division currently engaged in producing home freezing units, it should not surprise anyone if in time this division developed a motor truck refrigeration system. Experimental work is afoot.

C.O.E. Coming Up

An independent truck maker, not now producing C.O.E.'s, is grooming a good one for announcement sometime before the end of the year.

Sealed Cooling

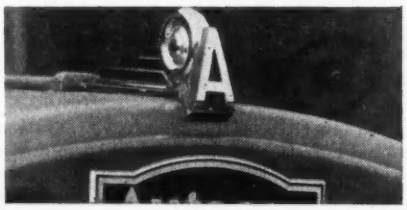
The Tucker car is only of academic interest to fleet operators, who for that reason alone will be interested in the fact that the car's 150-hp. engine will be liquid-cooled, featuring a sealed, pressurized cooling system, possibly using ethylene glycol.

Clutch Comes a Cropper

A manufacturer who had been hopeful of announcing soon some new clutch developments has run into design problems which make the product too expensive for the market. The need to simplify design and cut down costs will delay the announcement.

Just for the Record

An independent truck manufacturer has contracted for the output of a manufacturer of standardized body parts but is doing some experimental body assembly work in pilot plants before making a public announcement. This is merely to let readers know that we are on top of the development and respect the truck maker's desire to remain anonymous and to say nothing until all details are cleared up.



Autocar's new radiator emblem which will appear on all conventional chasses leaving the factory after April 1, 1947

A Shift to Hypoids

Our midwest sleuth reports that one of the largest independent producers of heavy trucks is planning a shift to hypoid gear axles in the not too distant future.

Auto Show in 1948

There will be no automobile show the latter part of 1947, but this annual automotive event will be resumed in 1948.

Detroit Dispatch

(CONTINUED FROM PAGE 33)

Infra-Red Defroster

Fleet owners operating trucks in the ice and sleet areas probably will be interested in a report from Hollywood that an inventor there has developed a device which uses infra-red radiation for defrosting windshields. The inventor states that the unit sends the rays through the windshield applying heat directly to the ice and giving much faster thawing action. He adds that the infra-red rays work equally well through glass of solid or laminated construction. The idea sounds good but we have no details about its cost or practicability.

Booster Brake for Cars

At least one passenger car manufacturer is borrowing a feature long used on trucks for his 1948 luxury model. We have confirmed a report that Kelsey-Hayes Wheel Co. has developed a vacuum brake booster that will be included as standard equipment on the 1948 Chrysler Imperial line. Lincoln also is said to be interested in the development. However, the opinion in Detroit is that the softer pedal and greater driving ease can be justified in the heavy, luxury lines, but hardly is likely to be included in lower priced models, except as an accessory. They point ut that the present brake systems are pretty efficient and not too hard to operate.

The 1947 edition of "Motor Truck Facts," published by Automobile Manufacturers' Association, is scheduled to come off the press in late March or early April. This valuable little publication is packed with a great deal of factual and statistical information about the motor truck industry.

CCJ READER DIGEST



To give busy readers basic facts, this month's leading articles have been condensed on this page

The Economics of Vehicle Replacement



by A. W. BASS, JR., The Atlantic Refining Co.

IT IS probably safe to say that the overwhelming majority of car and truck replacements are made on the basis of some arbitrary age or mileage figure, or on the basis of some high estimate of needed repair. Actually, none of these provides a logical basis for replacement, since the mileage basis disregards age, and vice versa, and a high estimate of necessary maintenance, taken by itself, may or may not posses significance.

Throughout the life of any piece of automotive equipment there are only two principal items of variable expense with which we have to deal. One is the real depreciation over any period of time in capital investment (resale value), and the other is the increment of increase in operating costs over the same period of time.

These two principal variable costs are in constant opposition to each other. The first, depreciation, tends to become less the longer the equipment remains in service. The other, maintenance expense, tends to increase. Where the increase in maintenance cost finally reaches or passes the savings in depreciation realized by continuing the equipment in operation, the unit should be replaced.

The method of calculation and working examples are found in the accompanying tables. See Page 46.

Dynamometer Dividends



by MARTIN SCHOENBACHLER, Silver Fleet Motor Express, Inc.

ONE of the most common, exasperating and indefinite complaints that the garage gets from the driver is the cryptic statement "No power." For that reason, we send all "no power" and tune-up checks to our dynamometer machine, where an experienced operator puts the unit through its paces.

The dynamometer also is part of the B check of our PM schedule.

While most of our mechanics can use the dynamometer, we have allowed one man to specialize on this work. This has worked out to our advantage.

Two important features of servicing become easy to see on the dynamometer stand. One is the action of the fuel pump when operating at full speed at full load, the other is the ease with which leaks may be observed. There are so many leaks that only occur when a unit is operated on the road that they are almost undetectable in the shop under ordinary conditions.

We find that timing can be better set while making a test on the dynamometer. Here, also, is an excellent opportunity to check the automatic advance of the distributor.

Engines that are properly timed and adjusted, not only deliver more power to the rear wheels, but also deliver a fuel record that means efficient and economical operation. See Page 60.

Special Shops for Heavy Maintenance



by D. V. GEARWAR, Associated Transport, Inc.

ASSOCIATED'S really heavy maintenance—the rebuilding of major component units and complete tractors—is handled by shops at Charlotte, N. C., and Springfield, Mass. Each operates on a virtual production line basis. There are no conveyor lines as yet, but engines in particular are handled on a step-by-step basis being conveyed from one station to the next by overhead cranes.

These same base shops also act as central supply depots for the entire system, and they are supplemented by three terminal shops set up for small unit rebuilding.

We consider trailer maintenance as an entirely separate subject for trailer repairs and lay special emphasis on this phase of maintenance. Daily and periodic checks are supplemented by complete rebuilding facilities at five of our shops. See Page 72.

Beautiful Bodies



FLEETMEN interested in the finest appearance obtainable for trucks will find Hoffman Beverage Co. has the answers. But they must be prepared to combine advertising dollars with transportation dollars, select colors without regard to maintenance cost and assemble a group of highly skilled craftsmen to man the paint shop.

Hoffman colors are pure white and royal blue with aluminum trim. Lettering is two-tone and cut out of pre-stenciled masking tape by hand. A special blower system clears the shop of dust and spraying is scheduled just before quitting time, so that paint may dry undisturbed. The cost of a repaint job ranges from $85 for a tractor to $315 for a 30-ft. trailer. See Page 54.

(TURN TO PAGE 156, PLEASE)

Mufflers Must be Muffled

. . . to Silence Objectionable Noises

To placate the public, exhaust noises can be hushed without unduly penalizing engine power output. Compromise must be reached on acceptable noise limits and allowable back pressure exhaust



NOISY TRUCK OPERATION is one of the industry's foremost public relations problems. Something must be done about the noise if restrictive legislation is to be avoided.

Trucks produce a variety of noises, but the chief offender and the loudest one in the ears of the public, is the exhaust. That, specifically, means the muffler. Some way must be found to muffle the exhaust to placate the public and yet not seriously affect engine horsepower.

Communities Up in Arms

THE threat of restrictive legislation is by no means a pipe dream. Communities on the West Coast are currently up in arms over the noise created by some of the larger trucks, and efforts are being made to pass local ordinances and even state legislation to effect quieter operation.

Most fleet operators want a quiet exhaust because they are fully aware of the public reaction to noise. They want mufflers not only to be more quiet but to last longer. There are some operators, on the other hand, who take a "public be damned" attitude and unless some way is found to curb them, it may be impossible to fend off some sort of noise-abating restrictions.

The problem requires the cooperative action of fleetmen, truck engineers and muffler engineers. Together, as this article develops further on, these groups can effect a satisfactory solution in which public agencies may take a willing hand.

The muffler problem is two-fold: 1. Quietness without power restriction, and 2. design and materials contributing to much longer life.

Taken singly or in combination, the solution implies higher cost to the fleetman. Until the majority of fleetmen express themselves as being vitally interested in good mufflers and willing to pay the freight as they do for other special options, the factories must go along on the basis of holding down the cost. In some cases this means smaller mufflers made of lowest priced materials consistent with average life.

and Noise Objectors

by ***JOSEPH GESCHELIN***

Commercial Car Journal
Detroit Technical Editor



IT CAN BE DONE—HERE'S HOW

Commercial Car Journal's Technical Staff dug into the noisy muffler problem from various angles. Engineers and manufacturers were interviewed. Here are the findings:

1. Truck mufflers can be made to give acceptable quietness on any size engine, whether it be rated at 100 hp. or 500 hp.

2. By proper coordination of design (to suit the engine) and harmony with the exhaust system, the quiet muffler need not penalize engine power unreasonably.

3. Proper design coupled with the selection of the right kind of engineering materials can prolong the life of mufflers to any degree truck operators are willing to pay for.

4. The combination of custom-made exhaust systems and mufflers resulting from this work may be of the same size or larger than they are today, but still reasonably consistent with the present size of units for heavy-duty vehicles.

5. The advanced type of muffler (of better design and produced from better materials) will surely cost more.

Now that we know that there is a practicable solution, the next step is to set the wheels of action in motion—but quickly.

Call for Cooperative Action

Commercial Car Journal suggests the formation of a cooperative industry group, under the leadership of the SAE or any other national group, composed of representatives of fleet operators, truck manufacturers, muffler makers, and public agencies that write and enforce the laws. This group would spark-plug a research project leading to a final solution and establishment of accepted "ground rules." The following channels of investigation are suggested:

1. The establishment of an acceptable noise level for exhaust systems of heavy-duty vehicles, set up on a practical basis to meet back pressure limitations.

2. Development of a coordinated exhaust system, taking into account the manifolding, tail pipe and muffler, and establishing "ground rules" for test procedures.

In addition to noise, another objection which has to do with the exhaust system should be given equal consideration:

3. A project on the control of smoke and fumes—to establish criteria for permissible standards for smoke and fumes capable of being checked by scientific means. To enforce control of these standards on the part of operators.

Compromise is Necessary

1. CAN truck mufflers be made acceptably quiet without penalizing power output? The majority opinion of the experts is—YES, providing there is established a definition for acceptable noise level (because there has to be some noise) and provided there is agreement as to allowable back pressure in the exhaust system.

Unquestionably the present lack of standardization of terms makes for whatever difference of opinion is expressed in the reports submitted by the experts. Truck engineers say, in effect, "Sure we can supply mufflers without objectionable noise, but we must compromise on noise level to prevent a reduction in engine power." On the other hand, engineers in the same group tell us of special cases where they have successfully devised tailor-made exhaust and muffler systems for certain operators. Obviously, the fleetman had to pay extra to get such equipment and such attention.

Although muffler manufacturers constitute a sizeable and important group, only certain ones are specializing in truck mufflers while the rest confine their efforts to passenger cars. This is because truck mufflers are large, are made in relatively small volume, and require considerable new tooling. It gets down to a matter of cost.

What is interesting, however, is that some of the major producers of passenger-car mufflers are seriously impressed with the truck problem and seem anxious to put their talents and laboratory facilities at the disposal of truck engineers. They feel truck exhaust can be quieted—within reason—on the same scale as are motor cars. True, it may mean larger mufflers than trucks wear today. Moreover, they will have to be tailor-fitted to each job. These manufacturers emphasize that mufflers have to be designed as an integral part of the exhaust pipe, and tail pipe—and tuned in harmony with the special tire exhaust system—the manifold, characteristics of a given engine. It's not a matter of size alone, it's tuning, too.

(TURN TO NEXT PAGE, PLEASE)

Mufflers Must be Muffled...

(Continued from Page 37)

One of the largest of the muffler makers built equipment for military vehicles having engines of 500 hp. output and successfully held down the noise without adversely affecting engine performance. They tell us they can make mufflers with adequate noise control and developing back pressure of no more than *one pound per square inch*—just what the diesel engine engineers are demanding. Truck engineers, please note.

If any of our readers—fleetmen or truck engineers—are interested, we shall be glad to give them the names of muffler producers who have volunteered to contribute to the solution of truck noise.

Acceptable Noise Limits

2. WHAT is an acceptable noise level in defining muffler design? Several important suggestions have been made along this line by the experts. One of the muffler makers says:

"Since the immediate problem is one of the effect of noise upon the public along the highways, we feel that a definite maximum sound level reading in decibels should be established together with the location of the microphone in relation to the tail pipe. We suggest two points of readings, one at the curb, and another fifty feet to one side and ten feet above the ground level. The first position corresponds to the pedestrian on the sidewalk, and the second to a person sitting on a front porch. The important thing is that all sound level readings be taken from the same relative position. This maximum sound level could be established by State Police Departments or other Government agency."

A prominent heavy-duty truck builder: "Our own engineering department has been actively pushing developments in this direction for some time and has succeeded in producing mufflers which, at a sound level of 115 decibels, permit the engine to produce the same horsepower as with a plain exhaust pipe and with back pressure increase from minus 0.7 to 0.24 in. of mercury."

Back Pressure Limits

3. WHAT are the back pressure limitations on muffler design? Here we have direct quotes from three truck engineers.

One of them reports: "In our laboratory tests we find that an open exhaust manifold produces the minimum back-pressure while the plain exhaust pipe from there back does produce 0.2 in. of mercury. These tests showed that the performance of the engine without the tailpipe and muffler was unsteady, thus suggesting that the inertia of the long column of gas exerts a scavenging action due to its own inertia."

Another engineer reports a serious problem owing to maximum back-pressure limitations established by some diesel engine manufacturers. He says, in part, "One of the main difficulties we are encountering today is the serious objection which the diesel engine manufacturers raise to any restriction in the exhaust system. As an example of this, the writer recently shipped a muffler to the West Coast which had a back pressure of approximately 1 in. of mercury, which is extremely low, and the operator was told that the engine manufacturer would not stand behind the engine if a muffler of this type was installed on the vehicle. So you can see that this matter will have to be ironed out befor complete harmony exists between engine and vehicle manufacturers."

A third engineer, representing one of the largest of the heavy-duty truck producers, comments as follows: "Present exhaust system (muffler and tail pipe) loss under peak maximum horsepower conditions ranges from 7.5 per cent in small chassis to 1.5 per cent in larger installations. One half of this loss is attributed to the muffler, remainder to exhaust pipe and tail pipe. Our present tentative standard calls for a maximum power loss of 2 per cent. Back pressure under these conditions might approach a maximum of 6 in. of mercury. A system giving back pressure values beyond this should not be considered. West Coast conditions are probably aggravated by extensive use of diesels, as some diesel manufacturers recommend back pressures not to exceed 1 in. of mercury under peak usable horsepower conditions. Such mufflers would be of little value in silencing."

On the other hand, the comment of the muffler maker mentioned under item (I) indicates that a straight-through muffler of proper design is considered as being acceptable even for low back pressure specification, provided it is tuned right.

Increasing Muffler Life

4. WHAT can be done to increase muffler life? The group of experts is agreed that a lot can be done to make mufflers last as long as do other parts of the vehicle. It can be done by combination of proper design and the selection of special materials suitable for heavy-duty service. They all agree that the solution will up the

(TURN TO PAGE 154, PLEASE)

JOBSERVATIONS

HORSE-SENSE IS MERELY STABLE THINKING.

* * *

A man must have wisdom — or supervision.

* * *

By the sweat of his brow, man earns his bread; but he has to use his brain to get the cake.

* * *

If you itch for success—just keep on scratching.

* * *

Wisdom is the science of putting to good use the little you know.

* * *

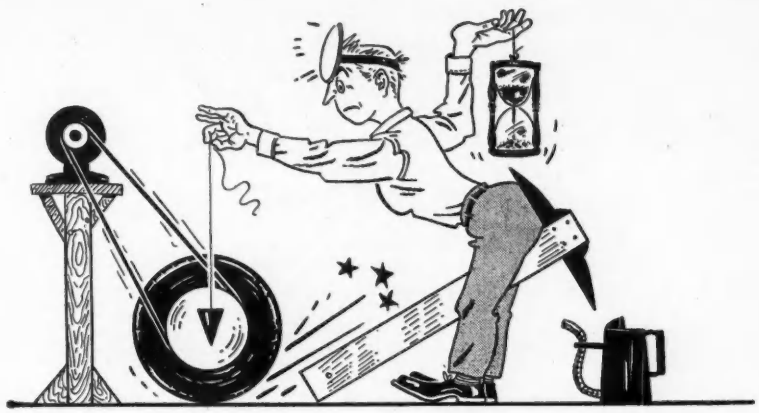
The "pace" that kills is sometimes the snail's pace.

* * *

REVISION: A ROLLING STONE GATHERS REMORSE.

* * *

Josh Billings said: "The man who kant find ennything to do generally hunts with great caushun."



Engineers Find 27 Factors Affect Premature

TIRE WEAR

Iowa experiments and PRA find

15 factors affect rate of wear,

12 contribute to carcass failure,

in vehicle operation cost study

THIS study of automobile tires is part of a general investigation of vehicle operating costs and of the roughness (in terms of riding comfort) and slipperiness of various types of roadway surfaces by the Iowa Engineering Experiment Station at Ames, Iowa, in cooperation with the Public Roads Admin.

The 10 sections of highway of various types, on which studies were made, varied in length from 20 miles to 320 miles. The sections of routes were located in four States — Iowa, Kansas, Missouri and Wyoming — and were selected because they were considered as reasonably representative of the types of surface on the main highways of the United States.

The scope of the investigation is indicated by the fact that it involved the use of eight automobiles with which detailed observations were made during 450,000 miles of carefully controlled driving.

Results of tire wear measurements are reported for more than 2,000,000 miles of tire travel on selected sections of the major types of road surface in Iowa, Kansas, Missouri, and Wyoming.

Tires were the subject of special study because their cost is influenced to a greater extent by the type and condition of the roadway surface than is any other item of vehicle operating cost. The study provided data indicating the effect of each of 15 factors on the rate of tire wear, and of 12 additional factors contributing directly to tire carcass failure.

It was determined that tire wear is influenced directly by: Car speed; rate of braking and accelerating; type of roadway surface; tire inflation; wheel alinement and wheel balance; atmospheric temperature; tire switching or "rotation" from one wheel position to another around the car; highway curves and grades; type, grade, and age of the tire; mechanical condition of the car; and the driving habits of the operator.

Factors which contributed directly to tire carcass failures were: Neglected cuts, punctures, stone bruises, rim bruises, and fabric breaks; heat, fatigue, overload, and incorrect in-

(TURN TO PAGE 138, PLEASE)

WHAT CAUSES TIRE WEAR

SPEED—High speed accelerates rate of wear more than any other factor. Higher wear at higher speeds is due to greater bouncing, slipping; increased traction required at rear wheels; increase in brake applications and braking time. Curves at "scream" speed cause wear 10 times that producing no sidewise skidding.

TRAFFIC CONDITIONS—Stop-and-go (city traffic) causes wear seven times normal on rural pavements at 45 m.p.h. Average city driving at customary speeds causes wear two to three times that on rural pavements at 45 m.p.h.

ROAD SURFACES—A speed of 65 m.p.h. on concrete produces wear four times that at 25 m.p.h.; the same speed on bituminous surfaces produces wear two times that at 35 m.p.h. Seasonal differences: Gravel is harder on tires in summer than in winter; dry concrete and bituminous surfaces are harder on tires in winter. Condition: Dry pavement wear is double that on same pavements when wet. Rough, loose, corrugated gravel surfaces produce high heat, impact and fatigue which cause tread cracking and blowouts. In 132,000 miles of driving on gravel, there were 98 punctures; one puncture in the same distance on concrete; one puncture in 72,000 miles on bituminous surfaces.

MECHANICAL CONDITION: Misalignment is greatest mechanical wear factor, causing wear 10 times normal.

WHEEL POSITION: Rear wheels wear 130 to 200 per cent that of front wheels; right rear, 10 per cent faster than left rear.

TIRE AGE: During first 500 miles wear is three times greater than after a 3000-6000-mile break-in. Increase due to age is less than 25 per cent additional for ages up to 3 years. Effect of age on wear is twice as great for rear tires as for front tires.



Northern Pacific Transport's widely diversified vehicle types include the 29-passenger bus, the 9-passenger combination unit and the 3-axle diesel tractor shown here in front of company's new Billings, Mont., headquarters shop

New Shop Designed for

Production Line Methods

Isolated headquarters garage of 170-unit fleet renders maximum service on straight-flow basis, has cut repair cost to 3.91 cents per mile

By F. R. MEEHAN

General Superintendent, Northern Pacific Transport Co.



F. R. Meehan

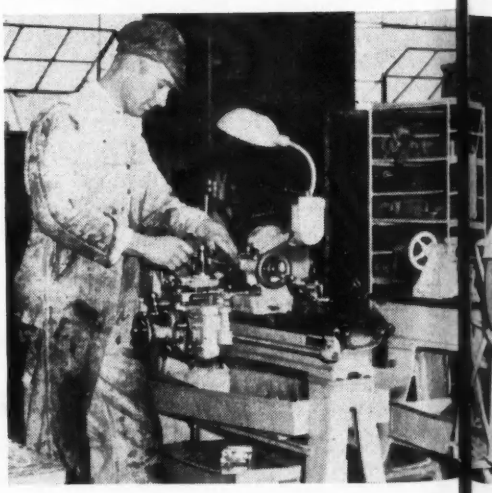
YOUR BUS AND TRUCK operations were established in 1931, at Billings, Mont., with a fleet consisting of three pieces of equipment. Today, we have 170 units—15 passenger buses, 10 combination freight and passenger units, and 145 pieces of freight equipment, consisting of straight trucks, truck and trailer combinations, and tractor semi-trailer units.

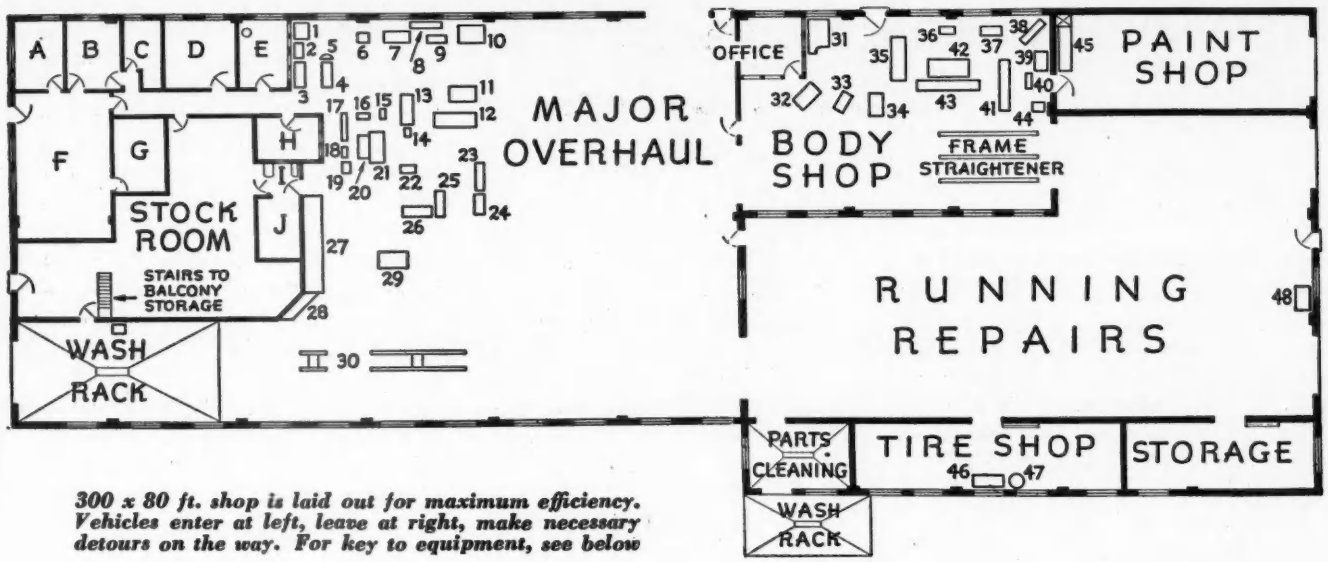
Garages are maintained at Billings, Butte and Missoula, Mont. The original Billings headquarters garage and shop was put up in 1941. In 1946 it was enlarged and completely remodeled.

Personnel at the Billings headquarters consists of three storekeepers, nine assigned to the office and supervisory work, 16 mechanics, four apprentices, four combination greasers and washers, two tire service and repair men, one body shop foreman, one general foreman, one night work foreman, and three night shift helpers: Total 45, with 105 drivers.

At the Butte garage there are: one foreman, two mechanics, one greaser,

Divided photo below shows small





300 x 80 ft. shop is laid out for maximum efficiency. Vehicles enter at left, leave at right, make necessary detours on the way. For key to equipment, see below

OFFICE AREAS

A. Private Offices
B. Supt. of Drivers
C. Office Wash Room
D. Mechanic's Wash Room
E. Driver's Wash Room
F. General Offices
G. Records
H. Foreman's Office
I. Counters & Parts Window
J. Tool Room

SHOP AREAS

1. Electric test bench
2. Electric work bench
3. Air bench
4. Storage cabinet
5. Pulmotor
6. Grinder
7. Welding bench
8. Welder's cabinet
9. Welding oven
10. Radiator test tank
11. Hydraulic press
12. Work bench
13. Large drill press
14. Small drill press
15. Reamer
16. Con. rod aligner
17. Lathe cabinet
18. Mandrel cabinet
19. Piston pin hone
20. Small lathe
21. Large lathe
22. Con. rod boring bar
23. Diesel work bench
24. Diesel test bench
25. Diesel parts cabinet
26. Storage cabinet
27. Parts cabinet
28. Battery charger & stand
29. Mechanic's bench
30. Twin post lifts
31. Sewing bench
32. Table saw
33. Planer
34. Band saw
35. Roller
36. Metal cutter
37. Grinder
38. Drill press
39. Forge
40. Anvil
41. Hydraulic arbor press
42. Metal table
43. Sheet metal brake
44. Welder
45. Paint bench
46. Air compressor
47. Air tank
48. Sand hopper

and an assistant superintendent who also acts as clerk. At Missoula we have one assistant superintendent, one garage foreman, three mechanics, one helper, and two greasers.

In addition to this, we have one overall combination supervisor of drivers and dispatcher at Billings, who has one assistant on the road.

Our operations are closely coordinated with the railway company to provide freight and passenger service for branch lines in lieu of train service to reach distant points not covered by the railroad, and to distribute long-haul merchandise brought into railroad division points.

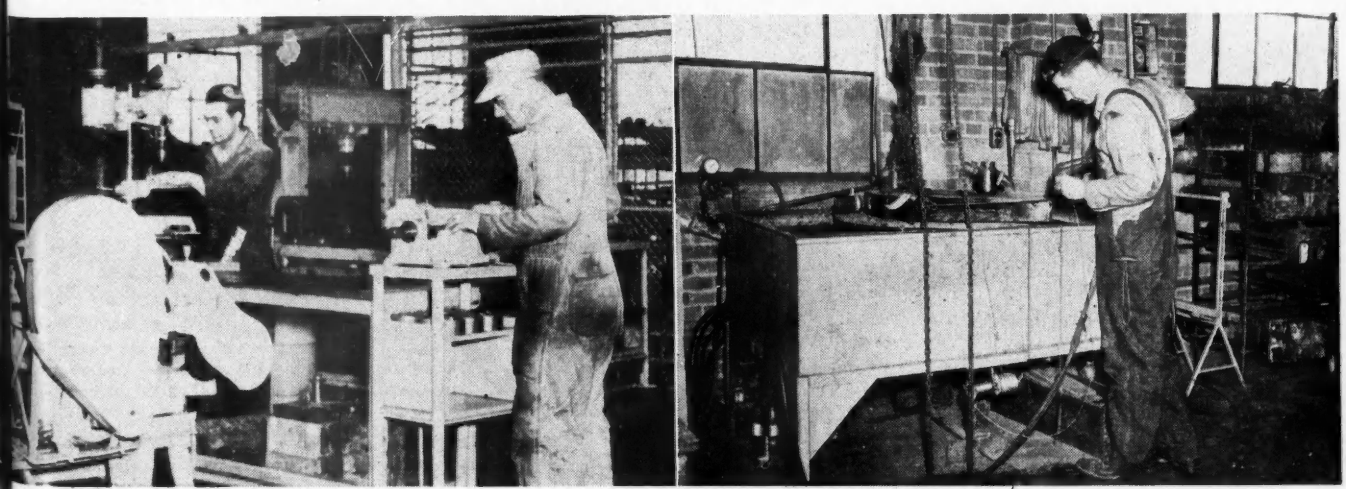
We participate in motor freight tariffs, and work closely with other motor freight companies. The bulk of our freight business is intra-state and, in general, our service is setup to provide overnight delivery from all distribution centers.

During the summer months (June 15th to September 10th), we serve two Yellowstone Park entrances: Gardner, and the northeast entrance at Cook City.

On the Billings-Red Lodge-Cook City Park entrance route, we conduct no freight operations west of Red

(TURN TO NEXT PAGE, PLEASE)

lathe, large lathe and con rod boring machine with drill presses and arbor press in rear. At right is radiator test tank



...Production Line Methods

(Continued from Page 41)

Lodge, handling only passenger and express service.

During the summer we also conduct an extensive sight-seeing service. One of these operations—between Cody, Wyom., and Billings, via Red Lodge through the Sunlight Basin reaches altitudes ranging from 5000 to 11,000 ft.

Our organization is a member of, and works closely with, The American Trucking Association and the Montana Motor Transport Association. We use the National Safety Council driver's safety program. And last, but far from least, COMMERCIAL CAR JOURNAL is read and studied monthly by every department head; we carry a complete indexed file of back issues in our store and parts department library.

The Billings Headquarters

ALTHOUGH the Northern Pacific Transport Co. was organized in 1931, it was not until 1934 that we began to expand operations. Prior to '34, all equipment was serviced at the Billings N. P. Railway shops. In late '34 we rented a garage in Billings and established a service depot at Missoula. We soon outgrew our rented garage and, in 1941, we put up a small garage on our own property.

Due to our isolated location, it was necessary that our facility was geared to as near 100 per cent complete service as was possible. As operations expanded, it became evident that we must have an overall maintenance setup which was wholly independent.

This complete-service demand was satisfied in 1946.

Our new fireproof brick building is 310 ft. long. The front section, for 200 ft. back, has a width of 80 ft. The remaining 110 ft. is 94 ft. wide. Every foot of our more than 25,000 sq. ft. of floor space is setup and geared to assembly line precision flow. *Speed through the plant* has been given priority in every department.

Eleven (5 x 20 ft.) steel frame skylights provide near 100 per cent daylight lighting. Ceiling heights range from 20 to 25 ft., with 14-ft. overhead automatic doors. Main floor areas with no obstruction posts. Fluorescent lighting units used in main office and at specific work areas in the shops. Steam heater units with blower fans provide heat in the winter and force cold air circulation in the summer. Air health conditioner in the paint shop. Under floor exhaust system in the main shop with continuous drain trenches with cast iron gratings through work areas provide carbon monoxide gas elimination through flowing water.

Unit Flow System Employed

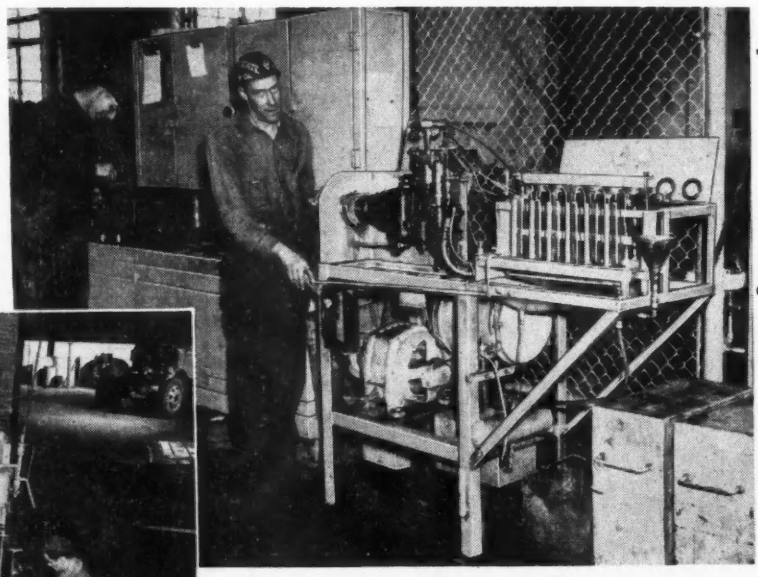
ALL units enter the building across the washrack at the west end, where they are first washed and cleaned. They then move on down the floor for greasing and servicing. Each unit passes over a twin-post hydraulic hoist.

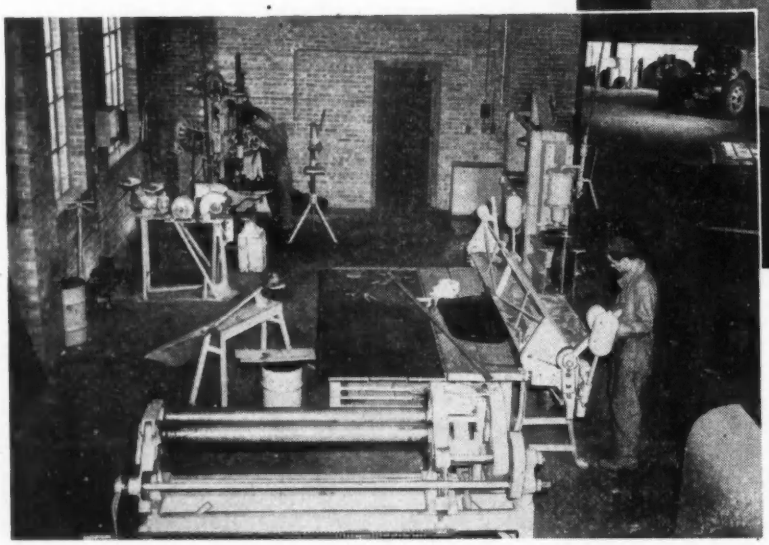
All greases and oils are dispensed to the units under air pressure from original containers, and are automatically metered.

Old oil is disposed of through an electrically operated automatic sump, and is pumped to a 500-gal. outside storage tank for later disposal.

After units are serviced, running repairs are performed in the large repair storage room adjoining the

(TURN TO PAGE 122, PLEASE)





Above. Diesel test bench for checking fuel pumps and injectors. Work bench and cabinets house diesel equipment

Left. General view of main body shop showing forming rolls in foreground, cutter, table and metal brake behind



EDITORIAL COMMENT

The OVERLOAD

by GEORGE T. HOOK, Editor

1. A Show Suggestion . . . 2. Standardization Stalemate . . . 3. Smudged by Smoke

1 AUTOMOBILE shows, according to the Automobile Manufacturers Association, will be resumed in 1948. This prompts us to make a suggestion which will doubtless cause some sales managers to grit their teeth and hurl what might be called imprecations at our head. But what's an imprecation among friends? The suggestion is simply this:

* * *

How about having a National Truck Show in connection with the 1948 National Automobile Show?

* * *

In the past the National Automobile Show has been held at Grand Central Palace in New York. Some trucks have been exhibited there but they had to be light jobs because the elevators were unable to handle the larger models. Moreover there never was enough space available for display of all makes of trucks.

* * *

Now that the Palace has been taken over by a railroad for office space, new show quarters must be found. Here is the industry's opportunity to break with the past. The new quarters, wherever they may be located, should be large enough to accommodate a combined passenger car and truck show.

* * *

No automobile or truck show has ever paid for itself in terms of orders signed at the show and leads that resulted in orders. But some factory sales managers persist in evaluating shows on a self-liquidating basis. There are indirect benefits of great value that cannot be reduced to dollars and cents and which undoubtedly accrue to the industry at large. In the case of motor trucks, educational exhibits setting forth their social, industrial and economic value would assure indirect benefits that would be of incalculable value to both users and makers of commercial vehicles. The makers of passenger cars themselves need to promote a little of the educational stuff. These are days when opportunitities for advancing public relations cannot be ignored. Together, passenger car and truck makers could put on a show that would startle the public into a fuller appreciation of their importance in the nation's economy.

2 **Reports reach us that efforts to standardize electrical connections, known as trailer couplings, are in a stalemate. The coupling manufacturers are fearful that standardization will, from a business standpoint, do them more harm than good.**

* * *

This is a case of history repeating itself, and the committee working on the problem should not become discouraged. The fear that business will be affected is an "occupational disease" that occurs every time standardization of anything is attempted. Sometimes the patients recover quickly by self-medication and sometimes they linger and have to be given a shock treatment.

* * *

By means of self-medication the opponents of standardization gradually come to realize that standardization of method does not mean standardization of quality. In the present case, for example, there could be standardization of couplings to the extent of making any make of plug fit any make of socket. The field would still be wide open to competition as to quality. Features that make for convenient handling and long life would not be subject to standardization.

* * *

That is precisely the situation today with regard to light bulbs and radio tubes. The field of competition has been limited only to the extent that all makes of bulbs must fit all sockets, and all makes of tubes must fit the sockets for which they are intended.

The shock treatment is a last resort when all other efforts have failed. Usually it takes the form of a threat that if standardization is not agreed to and carried out, those who favor it will take steps to effect standardization without the cooperation of the affected manufacturers. In the present case the trailer manufacturers could do this by standardizing on one make of coupling. We are sure they would rather not solve the problem this way.

* * *

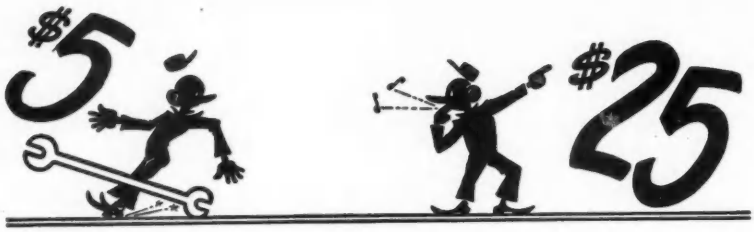
Trailer manufacturers have their own experience as proof that it need not be done this way. When efforts were made before the war to effect fifth wheel standardization, trailer manufacturers then had the same fears that beset trailer coupling makers now. Their fears certainly have not been realized, and the example they set is one that coupling makers should not hesitate to follow.

3 **The remedy for truck noises caused by the exhaust is discussed elsewhere in this issue in an article dealing with mufflers. Smoke is another of the problems confronting that part of the industry making and operating diesel-engined trucks. When diesel smoke gets in the eyes of an irate public the effect can be pretty costly. Out in Los Angeles an operator was fined $250 for allowing "unnecessary and unreasonable fumes" to arise from his truck. The cop who made the pinch thought the truck was "on fire." The operator had been cited before for excessive smoking.**

* * *

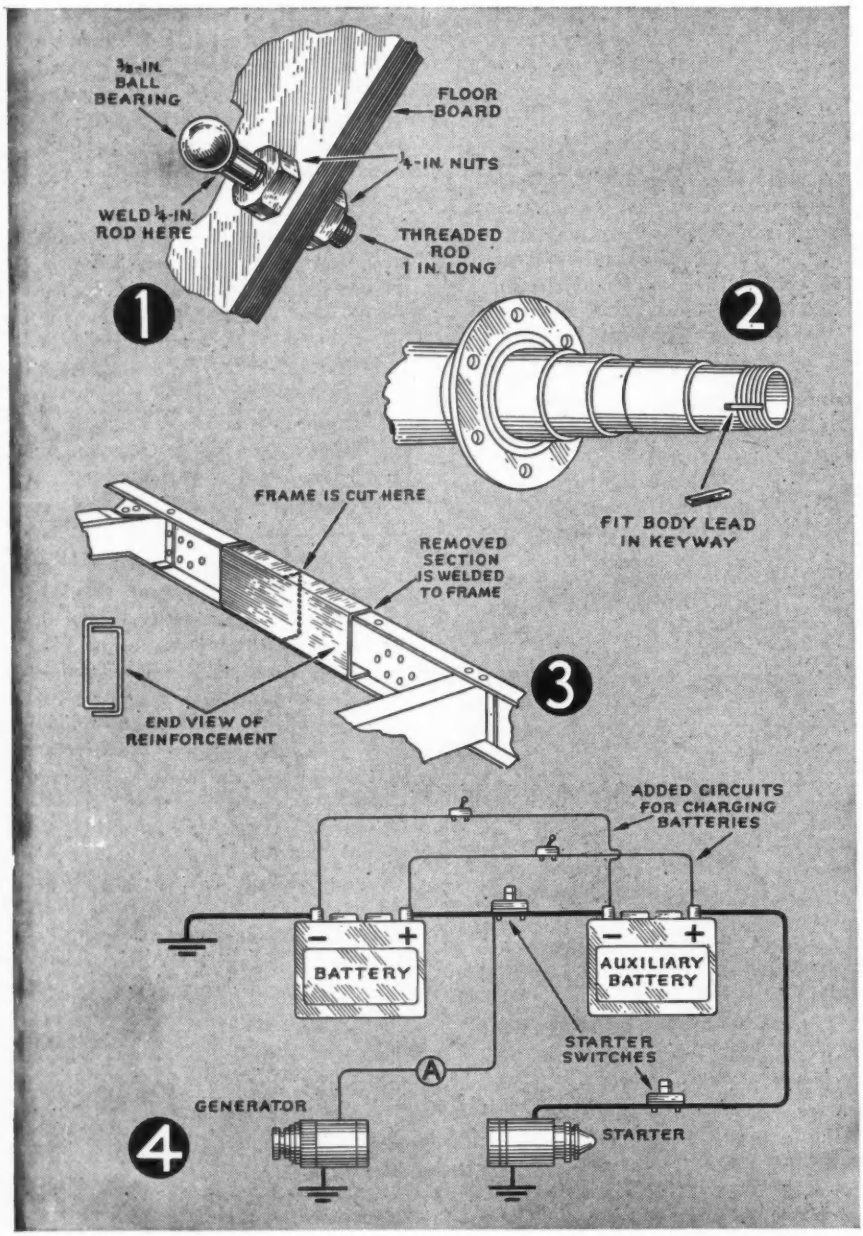
When fleet operators join diesel makers in saying that engines need not smoke excessively, any penalty imposed on an offending operator is deserved. It is just a pity that the entire industry's public relations must be smudged by a small group of smokers.

$5 FOR ALL HINTS PUBLISHED EACH MONTH



$25 FOR THE BEST HINT PUBLISHED EACH MONTH

Shop and Salvage Hints



1. Accelerator Repair

by Arvel A. Dotson, Garage Supt., American Bakeries Co., Rome, Ga.

As manufacturers do not furnish parts for accelerator repair, we have made our own floorboard brackets.

Accelerator pedals which use ball and sockets for the hinge can be repaired in this way. Take a piece of ¼-in. rod one inch long and braze a ⅜-in. steel ball bearing to one end. Thread the rod to take a ¼-in. nut.

Drill the floorboard and insert the rods in the proper location. Turn a jam nut down on the rod and place the lock nut on the opposite side of the floorboard so that proper height can be attained. This repair makes a lasting one and permits free operation of the accelerator pedal.

2. Shaft Rethreading Tip

by Joseph Dangelo Blakely Motor Sales, Welch, W. Va.

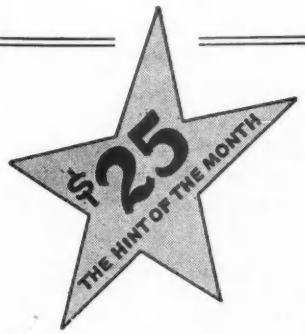
When rear axle tube threads become stripped or burred, I shape a piece of body lead to fit the keyway slot so that when using the tap, I can make a complete circle without getting metal chips in the threads. If this keyway is open, cuttings find their way into the threads and cause a rough cut. The lead is easily removed and saves a lot of time.

3. Wheelbase Shortening

by Henry Mikulisky Washington Co. Coop. Creamery Co. Linn, Kan.

In our creamery business we use 135-in. wheelbase trucks, but the

Now is the time for all good mechanics to make themselves some extra cash. All . . . yu gotta . . . do, is sit down and write up one of your shop's favorite short cuts to maintenance—or else some info on a durned good homemade shop tool. It might be a tip on salvaging some of that junk hang-around the back room—and it could be on an improved repair method that your shop has developed. You don't like to write? Well, draw a picture—shoot us a diagram with a few simple words. We'll attempt to figure it out. We will do the work, but we want your idea. For five fins, men, you can't go wrong. Give it a try, and you may hit the jack pot of $25, with five bucks the absolute minimum for an accepted service hint or a short cut to maintenance.



shortest we can get is 159 in. It is necessary to cut down the truck to suit our work.

We cut 2 ft. out of the frame back of the cab and set the rear end up, weld it together and then weld the two frame pieces back on the inside of the frame as shown.

I do this alone in one day and save the company about $100 on the job. The shortened frame, reenforced in this way is stronger than the original. This method of shortening frames has been used in our company for several years.

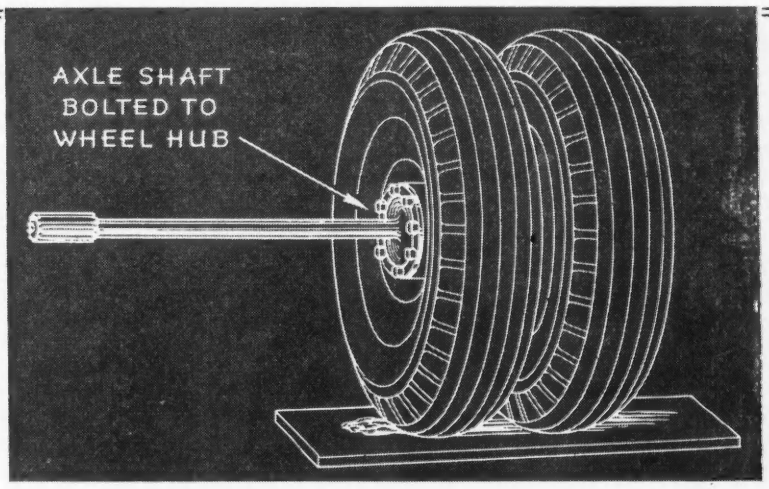
4. Winter Starting Tip

by Adolph Garbrecht
Marinette County Highway Shops
Peshtigo, Wis.

I have a way of getting truck and tractor engines started in winter, and it has saved 75 per cent of our starter trouble. By using one extra battery, an auxiliary starter switch, two small toggle switches and some wire, I connect an extra battery in series with the regular battery, giving 12 volts at the starter for turning over cold, heavy engines.

The accompanying diagram will show how this is done. The second starter switch is mounted near the regular one so that both can be pressed at the same time. The two small switches are mounted on the dash and are connected into the circuit as shown. This is used to connect the batteries in parallel so that they can be charged by the regular generator.

I have used this method for three years and have found it very satisfactory. Ed. Note: The reader will recognize the danger in this modification. Applying 12 volts to a 6-volt starter may burn it up in due time. The driver will need to remember that use of the starter for over a few seconds at a time will damage the starter—but it is possible to use this system as a cold weather expedient.



Wheel Removing Tip

by W. M. Kendrick
Acme Laundry Co., Chatham, Mass.

When removing rear wheels and hubs for brake or bearing jobs the old trick of removing the axle shaft and bearings and then sliding the wheels off on a greased plank is ok, but there is no place to grab the big ones.

Here is an easier way to handle large size wheels. Bolt the axle flange back on the hub with the shaft extending out. This acts as a handle, giving you control of the wheels. With a little juggling, they will slide easily.

The ECONOMICS of Vehicle REPLACEMENT

Depreciation and operating costs are the key considerations. They follow a definite pattern, enabling accurate forecasting of economical vehicle replacement



by **A. W. BASS, JR.**
Assistant Manager, Automotive Transportation Division. The Atlantic Refining Co.

TENS OF THOUSANDS of times a year the operators of motor vehicle fleets in the United States are faced with the question, "Should we continue to repair this vehicle, or replace it with a new one of the same general type?"

It is probably safe to say that the overwhelming majority of car and truck replacements are made on the basis of some arbitrary age or mileage figure, or on the basis of some high estimate of needed repair. Actually, none of these provides a logical basis for replacement, since the mileage basis disregards age, and vice versa, and a high estimate of necessary maintenance, taken by itself, may or may not possess significance.

The failure of the industry so far to adopt generally some more realistic basis for determining the economic point for replacement may be due in part to the assumption that motor vehicles are capital items rather than expense items. If we assume these vehicles to be expense items, we lose some of our concern for the large outlay in acquiring them, and transfer our concern to the year-to-year costs of operating them. On this latter basis replacement becomes tied to overall operating costs, where it probably belongs, and not to investment.

Only Two Principal Factors

FOLLOWING this line of reasoning, we discover that throughout the life of any piece of automotive equipment there are only two principal items of variable expense with which we have to deal. One is the real depreciation over any period of time in capital investment (which depreciation is measured in terms of resale value), and the other is the increment of increase in operating costs over the same period of time. I believe that, if it is possible to consider these two costs in their correct relationship to each other, it is possible to determine the economic replacement point for the vehicle.

Real Depreciation

REAL depreciation is not to be confused with book depreciation. For the purpose of this analysis, real depreciation is defined as the decline in resale or market value over any period of time.

All of us know that in prewar years automobile dealers referred to a so-called blue book in arriving at a trade-in value or resale value for used automobiles. Dealers in truck equipment did very much the same thing. A study of these resale or trade-in values of old equipment reveals a quite consistent trend in the theoretical decline in resale value based upon the age of the equipment.

This decline in value is somewhat more rapid for the high-priced trucks than it is for low-priced trucks; and, even here, more rapid than it is for passenger car equipment. The shape of this depreciation curve has been obtained from data in various blue books, and car and truck appraisal manuals. Regardless of source, this data has produced curves which are substantially identical. Below is expressed, in percent figures, the shape of this curve for three different price categories of trucks and for cars.

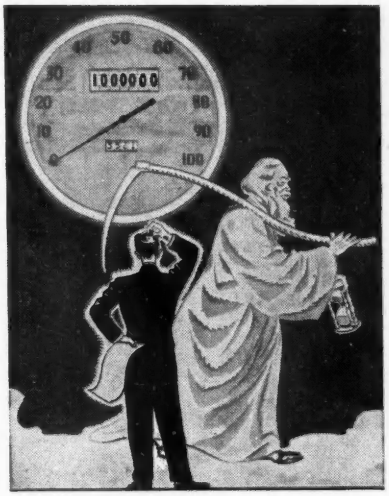
Market Value, Standard Models Used Cars & Trucks
Expressed in Percentages of Original Delivered Cost

End of	TRUCKS			Passenger Cars
	$2500–$5000 Class	$1000–$2500 Class	Under $1000	
1st Year	85%	58%	60%	64%
2nd Year	45	48	50	52
3rd Year	35	38	40	41
4th Year	25	28	30	32
5th Year	17	19	21	24
6th Year	11	13	14½	17
7th Year	7	8	9½	11
8th Year	4	5	6	8

Plus or minus certain small variations which may result from better or poorer average condition of equipment, the annual costs of depreciation calculated from these percentages will be a very true reflection of the depreciation expense involved in operating the unit for any given year.

The Important Point

IT MUST be borne in mind, however, that our principal interest lies not with the actual depreciation experienced during a year on any given vehicle, but rather with the difference between the average annual cost of this vehicle's depreciation for preceding years and the calculated cost of depreciation during the year in question. To compare the depreciation costs for the year in question to anything other than the average depreciation cost up to that time will not give a true picture of what we save by continuing the vehicle in service for another year.



This point is of sufficient importance to stand some further amplification. To determine the depreciation savings in operating a truck during the fourth year of its life, we cannot compare that year's depreciation to the depreciation cost for the third year only, for this would totally disregard the higher depreciation expense of the first two years. Similarly, we can't correctly compare it to the calculated first year depreciation of the vehicle which might replace it, for this would, on the other hand, disregard the lower depreciation costs which would be enjoyed in the subsequent years.

Method of Calculation

BELOW is illustrated the method of calculating the depreciation savings realized from year to year in the operation of a truck chassis purchased in 1940 for $3923.

Year	A Annual Cost of Depreciation	B Average Annual Depreciation Cost	C Annual Depreciation Savings
1940	$1765	$1765	
1941	392	1079	$1373
1942	392	850	687
1943	392	735	458
1944	314	651	421
1945	235	581	416
1946	157	521	424

Referring to the table of market values, it can be seen that the resale value of this truck declined from 100 percent to 55 percent in the first year. This reduction of 45 percent when multiplied by the original cost of $3923 equals $1765, our first year's depreciation. In the second year, resale value declined from 55 percent to 45 percent, a matter of 10 percent. This, multiplied by $3923, gives the second year's depreciation of $392.

The average annual depreciation costs, shown in Column B, are an average of the costs of Column A.

Column C gives the depreciation savings with which we are principally concerned. To determine these savings we subtract the annual cost of depreciation in Column A from the average depreciation cost in Column B for *preceding* years.

To determine depreciation savings realized by keeping the equipment in operation during 1941, we subtract $392 (Column A) from $1770 (Column B) and obtain $1373 (Column C). The savings in 1942 is obtained by subtracting $392 from $1079 to get $687.

Costs Increase with Age

WHILE the operating costs which include repairs, gasoline, oil, tires, license and insurance show a definitely increasing trend throughout the life of a vehicle, it has been found that the factor influencing this increase to by far the greatest degree is maintenance. The longer a vehicle is continued in operation, whether measured on a time or a mileage basis, the more it costs to maintain it per mile or per year.

It has been argued that, under a system of preventive maintenance, repair costs will rise for the first year or two and then plateau. This has not been our experience. Even when reviewing the history of repairs on vehicles in service for as long as 14 years, the rising trend has never terminated. This experience reflects, in theory at least, what we should expect. All elements of a vehicle do not require repair or replacement at the same time. Brake lining may be good for a year, the engine for two years, air compressor three years, transmission four years, cab six years, wiring six years, frame eight years, etc. Each succeeding year finds new elements needing attention, in addition to repeat maintenance of elements overhauled or replaced at an earlier date. Maintenance costs, therefore, of necessity tend to pyramid.

When to Replace

THESE two principal variable costs (depreciation and maintenance), are, however, in constant opposition to one another. The first, depreciation, tends to become less the longer the equipment remains in service. The other, maintenance expense, tends to increase. Where the increase in maintenance cost finally reaches or passes the savings in depreciation realized by continuing the equipment in operation, the unit should be replaced.

In an effort to reconcile declining depreciation savings with increasing maintenance costs it is necessary that similar time periods be used. In this case an annual comparison is recommended. However, total annual costs of depreciation and repairs cannot be compared unless the miles operated each year of vehicle life are identical.

"Over-Age" Maintenance Costs

SINCE we are interested in the extra maintenance costs resulting from each additional year of operation, and since miles run per year is a variable, it is necessary to

(TURN TO NEXT PAGE, PLEASE)

obtain our increment of increased maintenance expense on a cost per mile basis. To obtain a total yearly figure for comparison with yearly depreciation savings, it is only necessary to multiply the difference between repair cost per mile for the year in question and the average repair cost per mile up to that time by the miles run that year.

Here it must be emphasized that our concern is with the *increment* of increased cost of maintenance and not with the *total* cost of maintenance for that or any given year.

Total costs will, in every case, reflect number of miles operated. This being the case, with a declining mileage from year to year, the total cost might remain constant or even decline, whereas our cost per mile operated was actually going up. Since, however, it is necessary to compare a total rather than pre-mile increase in cost with our total savings in depreciation, it becomes necessary to multiply miles operated during any given year by that part of the cost per mile which shows an increase beyond the average cost per mile up to that time. This is illustrated below:

Year	A Repairs	B Miles	C Repair Cost Per Mile	D Average Repair Cost Per Mile	E Extra Repair Cost Per Mile	F Extra Repair Cost Per Year
1st	$277	27,000	$.0103	$.0103	....	....
2nd	575	63,000	.0091	.0095	....	....
3rd	976	50,000	.0195	.0130	$.0100	$500
4th	1837	60,000	.0306	.0183	.0176	1060
5th	1494	46,000	.0325	.0210	.0142	655

In the above, Column A gives actual cost of repairs and maintenance during the first year, and Column B, actual miles operated. These figures are taken directly from cost and statistical records.

Column C represents the repair cost per mile by year, and is obtained by merely dividing annual repairs by annual mileage.

Column D is a cumulative figure of average repair costs, and is obtained by dividing the total of repair costs to date by the total miles to date.

Column E is the increment of increase in repair costs, and is obtained by subtracting, from the repair cost per mile for any year, the average repair cost per mile for preceding years. For example, the extra repair cost of $.0100 for the third year is obtained by subtracting $.0095 (Column D) from $.0195 (Column C).

The extra repair costs for the year (Column F) is obtained by multiplying Column E by miles in Column B.

Determining Economic Replacement

IN ORDER that direct comparisons can be made between the depreciation savings on the one hand and the excess maintenance costs on the other, it merely becomes necessary to enter on a single form the appropriate calculations illustrated in the foregoing. Such a replacement record is illustrated at top of adjoining column.

From this table it can be seen that in 1943 the increment of increased or extra repair costs exceeded the annual depreciation savings for the first time. It will also be noticed that, from this year on, the increase in repair costs continued to exceed depreciation savings.

By operating the vehicle in 1943, $458 was saved in depreciation, but $1060, additional, was spent for repairs.

Economic Replacement Record

Equip. No. 910-420. Date Purchased—March 1940. Make X .
Model X . Type Body Tank Semi. Cost $3923.

Year	Annual Cost of Dep.	Average Annual Dep. Cost	Dep. Savings from Continued Operation	Repairs	Miles	Repair Cost Per Mile	Av. Cum. Repair Cost Per Mile	Extra Repair Cost Per Mile	Extra Repair Cost Per Year
1940	$1765	$1765	....	$277	27,000	$.0103	$.0103	$....	$....
1941	392	1079	$1373	575	63,000	.0091	.0095	-.0004	....
1942	392	850	687	976	50,000	.0195	.0130	.0100	500
1943	392	735	458	1837	60,000	.0306	.0183	.0176	1060
1944	314	651	421	1494	46,000	.0325	.0210	.0142	655
1945	235	581	416	1617	40,000	.0404	.0236	.0194	780
1946	157	521	424	2384	40,000	.0595	.0281	.0359	1440
				$9160	326,000				

The penalty for continued operation was $1060—$458 or $602 in 1943, $234 in 1944, $364 in 1945 and $1016 in 1946.

Cost Increases Immutable

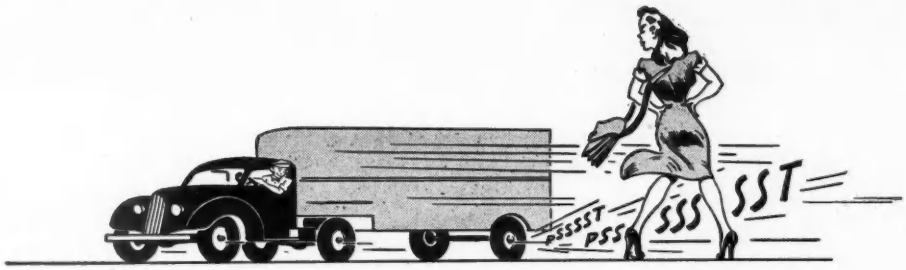
A REVIEW of a large number of passenger cars and trucks has rather conclusively established one fact with respect to this concept of the economic replacement point. Once repair costs exceed depreciation savings, the reverse condition — for all practical purposes — never again exists. When, in any year, savings and costs reach an approximate balance, the succeeding year will find repair costs exceeding depreciation savings and this trend will continue. There are some specific exceptions to this, but no attempt will be made to discuss them at this time.

Forecasting Replacement

WHILE a historical review of cost data on old equipment will reveal when this equipment should have been retired, our decisions in applying such a program must be made in advance of this data. This forecasting of what we should do is not as difficult as it may appear. As mentioned above, when the cost and savings for any year approach a condition of balance, we can generally expect the economic line to be crossed in the succeeding year. A further check on this is possible by a mechanical appraisal of the vehicle directed toward estimating the maintenance necessary to satisfactorily operate for another 12 months. This cost estimate can be substituted for the actual repair costs for the succeeding year and the excess repair costs calculated in the usual manner.

The ability to forecast a year in advance what equipment will be retired has other corollary advantages. It permits tapering off on maintenance during this period and provides a more informed basis for making decisions on the repair versus the replacement of units of the vehicle.

Neither this or any other approach to the problem of arriving at the economically correct point at which vehicles should be replaced can be considered absolute. All the factors which might influence such decisions are not embraced by this formula, nor are all such additional factors susceptible to exact measurement. It is believed, however, that the fundamental cost considerations as outlined will, barring extraneous considerations, provide a valid basis for replacement. Even where other considerations appear, they can be better evaluated against the background of this fundamental data than without it.



Air Brake Troubles

— — Quick Checks for Trouble Shooters

Compressor troubles, governor and air valve checks, and common braking difficulties reviewed. Other conditions outlined in trouble shooter's list

by M. K. SIMKINS
Technical Editor, Commercial Car Journal

THE AIR BRAKE SYSTEM is probably one of the most simple units on the vehicle—and one of the most often neglected from the standpoint of proper preventive maintenance. There seems to be no logical reason for this attitude, aside from the fact that air-actuated brakes are long-lived and easily operated so that drivers' complaints are infrequent. Stopping distance is usually within requirements, even with delayed adjustments, and actuation is generally certain and more or less balanced due to the inherent characteristics of air itself. However, since an ounce of prevention is worth a pound of cure, a thorough check of the entire system periodically will certainly enable the operator to get more satisfactory brake mileage, will insure against sudden failures and will save tire wear appreciably.

Before working on any individual unit in the system, the mechanic will make the following checks in the order listed to locate defective units:

1. Drain tanks. Note evidence of excessive water or oil formations.
2. Clean compressor air strainer and check for proper installation.
3. Start engine. Check pressure build-up at idle speed.
4. Check compressor for noisy operation and for oil or water leaks.
5. Note pressure at which governor cuts in.
6. Shut off discharge line and check opening of safety valve.
7. With normal operating pressure, check for leakage, noting loss on gage.
8. Apply brakes and note loss of pressure in the applied position.
9. Check operation of stop-light switch.
10. Bleed tanks and note when governor cuts in again.
11. Bleed tanks on down and note cutting in of low pressure indicator.
12. Make individual unit leakage tests as necessary.

Compressor Troubles

AIR BRAKE compressors are generally reliable units, giving little trouble with proper service. Because of many different types in service, it is difficult to set up any specific serviceability requirements. The first sign of wear or maladjustment usually shows up in failure of the compressor to maintain normal air pressure in the reservoirs. This may be caused by excessive wear in pistons, cylinders, rings or valves.

Worn or warped discharge valves will contribute to slow build-up of air pressure as will weak discharge valve springs. These conditions, along with worn or pitted valve seats will allow the air pumped into the discharge line to return to the cylinder upon the downward stroke of the piston. Leaking discharge chamber nuts will cause a similar condition. These nuts require no gasket, but the machined surface must be kept smooth, and the nuts must be kept tight on the seat. Other contributing conditions to slow pressure build-up are loose line connections, excessive carbon formations in the head, too slow an engine idle speed or a slipping compressor drive.

One of the first signs of defective rings is excessive oil formation in

(TURN TO NEXT PAGE, PLEASE)

Air Brake Troubles . . .

(Continued from Page 49)

the reserve tanks, in which case the oil simply passes through the cylinders and into the air system. Oil formations not only reduce the efficiency of brake applications, but will enable the air valves to collect dirt and grit, causing leakage and premature wear of the valve seats. Accumulations of oil will eventually rot the cotton ducking in the air chamber diaphragms.

Sometimes the presence of oil in the system is the result of a clogged air strainer on the compressor. In this respect air is sucked up from the compressor crankcase, bypassing the regular air intake and carrying an oil mist with it.

During cold weather operation, oil with water formations will sometimes freeze in the neck of the air tank. Electrically heated units are available for keeping this passage open and may be the operator's solution to such failures. Alcohol evaporators are practical in some climates, but are not satisfactory in extremely cold areas, according to some manufacturers. Daily draining of the reservoirs is the best way of eliminating the ill effects of water formations.

Noisy Compressors

IF THE compressor fails to unload and the governor has been checked, the trouble may be due to carbon formations in the discharge line, in the unloading cavity or carbon around the discharge valves. Too wide an adjustment of the unloading valves would keep the compressor from cutting out as would a leaking unloader diaphragm. In checking for this condition, the mechanic will be guided by the amount of carbon in the discharge cavity when he removes the discharge cavity cover plugs. If carbon can be scraped away with the finger nail, it is a good indication that service is necessary.

Noisy compressor operation can be attributed to one of several things.

Worn rod and crankshaft bearings can be detected by holding the stem of the discharge valves down and listening for the knock. If the noise stops, it is probably due to worn bearings.

Excessive crankshaft end play can be detected by checking the shaft by hand, while a loose drive pulley can be found by holding a bar against the pulley while it is operating to see if the knocking stops.

It is possible, with a high degree of carbon formation in the compressor discharge head, that the discharge valves can open to a point where their heads strike the top of the piston as it comes up. Adjustment at the stem will not improve the condition as carbon build-up will keep the valve from seating properly in the head. If this condition is noted, it will be necessary to remove the head and scrape off carbon formations.

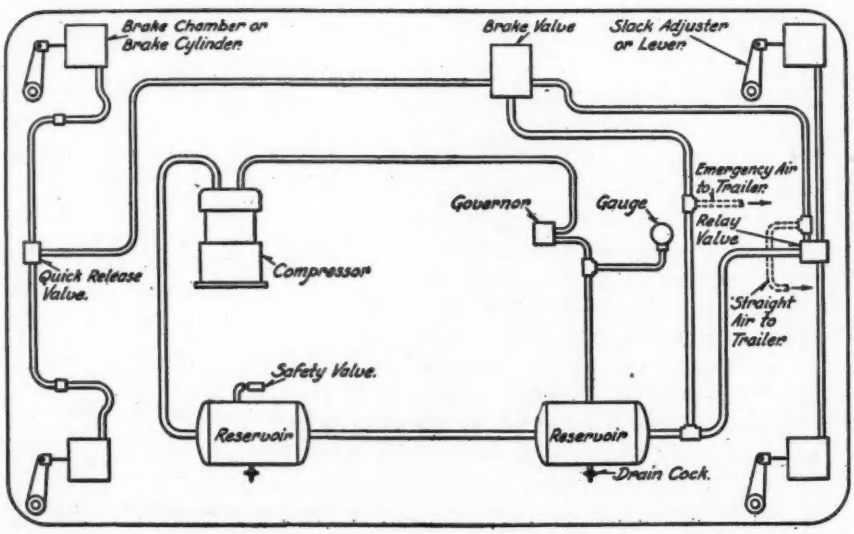
Governor Checks

MANY governors in trucks operating today are not working properly as evidenced by the fact that air pressure ranges all the way from 150 lb. to 40 lb. Actually a truck should never be moved until and unless the reserve tank pressure measures at least 60 lb. Manufacturer's recommendations should be adhered to for proper running tank pressure.

The pressure range may be increased by removing shims from beneath the valve guide and decreased by placing additional shims beneath the guide. However, if pressure range follows specifications, the pressure setting may be raised by lengthening the adjusting screw shank over the discharge valve, or it may be lowered by shortening the shank through this adjustment.

If the governor is permitting air to leak past, the mechanic will want to know which valve is defective so that he can dress it. With the governor cut in, he will cover the exhaust port with soap suds. Leakage, that is, over a 3-in. bubble in 3 sec., points to a defective lower valve. With the governor cut out, leakage at the exhaust port indicates that the upper valve is leaking. In many cases this will be caused by dirt on the valve seat. Cleaning with kerosene or gasoline and polishing the valve in its seat with grade No. 1000 grinding compound will usually correct this condition. Oil accumulating on the lower valve collects dirt and carbon and results in leakage. This can be remedied by soaking the governor body in a carbon dissolving solvent until it is clean. If valves are found in this condition, it will be wise to replace the governor air strainer arbitrarily.

Badly worn valves cannot be reseated, and replacement of either or both valves is usually frowned upon as uneconomical. If the governor shows this much wear, it is recommended that the entire unit be replaced.



Schematic diagram showing units and lines in a typical air brake installation

Checking Air Valves

THE various brake valves in the system work much the same, and checks can be carried out in much the same manner. Air valves in general have an exhaust and an intake chamber with a diaphragm, either air or lever-activated, and two ports, the exhaust and intake. Tests are made by covering the exhaust ports with soap suds with the brakes released and noting air loss through bubble formations. Over a 3-in. bubble in approximately 3 sec. denotes excessive leakage of the intake valves. Leakage at the exhaust port with the brakes applied shows leakage of the exhaust valves. No leakage is permitted around the diaphragms or at any connection. Leakage is usually the result of dirt and carbon formations or worn valve and seats, and remedy is usually a new unit. Sometimes, as a temporary measure, valves can be reseated by turning them on their seats using a fine grade No. 1000 grinding compound, but such as procedure is not recommended except as a temporary expedient.

Insufficient Brakes

INSUFFICIENT brakes can be caused by too little pressure in the reservoir. Most air brake systems do not operate properly with less than 60 lb. air pressure in the air tanks. If the gage registers adequate pressure, and yet the brakes do not operate properly, it would be advisable to check first the dash gage with a master gage, as it is possible that the gage is incorrect or that the governor is not set at the correct adjustment. If the gage does not show over 80 lb. pressure, the governor should be checked both for range and for upper and lower settings. However, inadequate brakes may be caused by improper adjustment at the shoes, by frozen cams, by defective brake chambers or by oil-soaked linings.

Insufficient brakes may be due to improper adjustment of the slack adjuster. Push rod travel may be within specifications and yet the lever would not secure proper purchase. When adjusting, the slack adjuster should be held to an angle greater than 90 degrees with the push rod with the brakes released, and all slack adjusters should be set at the

(TURN TO NEXT PAGE, PLEASE)

Trouble Shooter's Check List

1. AIR PRESSURE SYSTEM

A. Slow pressure build-up
- Worn piston rings in compressor
- Scored cylinder walls
- Leaking discharge valves or seats
- Leaking lines or connections
- Clogged compressor air strainer
- Carbon in discharge line
- Leaking application valve
- Insufficient unloader valve clearance
- Excessive carbon in head
- Slipping compressor drive
- Too slow engine idle speed

B. Quick loss of pressure
- Worn, leaking discharge valves
- Leaking lines or connections
- Leaking brake valves
- Leaking governor valves
- Sticking discharge valves

C. Compressor not unloading
- Restriction in unloading line
- Excessive clearance, unloader valves
- Carbon in unloader cavity
- Stuck unloading mechanism
- Defective governor
- Governor out of adjustment

D. Noisy compressor
- Loose drive pulley
- Worn, burned out bearings
- Worn connecting rods
- Loose piston pins
- Broken piston rings
- Broken discharge valves
- Carbon under discharge valves
- Weak, broken valve springs
- Carbon deposits in head
- Restricted oil line to bearings

E. Oil and water in system
- Poor daily PM
- Worn rings in compressor
- Scored cylinder walls
- Clogged air strainer
- Excessive oil pressure
- Excessive temperature changes

2. THE FOUNDATION SYSTEM

A. Insufficient braking
- Cams out of adjustment
- Push rods out of adjustment
- Glazed, worn out liners
- Drums turned too thin
- Grease-soaked linings
- Lining of improper diameter
- Leaking brake chamber diaphragm
- Binding brake pedal
- Brake valve out of adjustment
- Inadequate air pressure
- Improper brake shoe adjustment

B. Slow brake application
- Improper brake shoe adjustment
- Low air pressure
- Restricted lines and tubing
- Moisture frozen in system
- Excessive push rod travel
- Frozen cams
- Leaking brake valve diaphragm

C. Slow release of brakes
- Improper brake adjustment
- Frozen cams
- Rusted cam lobes
- Weak retractor springs
- Frozen anchor pins
- Dry cam faces

3. ROAD TEST CONDITIONS

A. Grabbing brakes
- Loose, broken spider brake
- Broken support plate
- Loose brake liners
- Flat spots on cam
- Grease-soaked linings
- Out-of-round drums
- Binding brake rigging
- Defective brake valve
- Loose backing plate
- Drums turned too thin

B. Side pull
- Improper brake adjustment
- Defective lining
- Improperly adjusted push rod travel
- Oil soaked lining—one wheel
- Broken shoe retractor spring
- Leaking diaphragm in brake chamber
- Unequal spring tension in diaphragm
- Out-of-round drum

C. Noisy brake application
- Weak, broken retractor springs
- Loose liners or rivets
- Thin brake drums
- Foreign particles imbedded in drums
- Glazed, thin linings
- Poor lining contact with drum
- Broken, misaligned shoes
- Loose backing plates
- Tool marks in drum
- Unbalanced brake linings

4. UNSATISFACTORY LINING LIFE

A. Fleet habits
- Careless relining practices
- Negligent preventive maintenance
- Too heavy schedules
- Too heavy loads
- Improperly operated brakes
- Use of inferior brake linings
- Negligence in part replacement
- Improper load distribution
- Improper adjustments

B. Fleet modifications
- Use of improper brake linings
- Redesigning fifth wheel location
- Redesigning of wheelbase
- Changing drum materials
- Increasing tire sizes

C. Driving habits
- Fanning of brakes
- Failure to shift down on hills
- Too fast speeds
- Riding brake pedal

5. UNSATISFACTORY DRUM LIFE

- Linings of improper coefficients
- Improper cleaning and maintenance
- Improper drum grinding techniques
- Unbalanced brakes
- Conditions under No. 4

Air Brake Troubles . . .

(Continued from Page 50)

same angle. Then, with the brakes applied, the slack adjuster will not go "over center," and brake efficiency will be maintained.

One of the greatest contributing factors to unsatisfactory air chamber diaphragm life is too much rod travel. This adjustment should be held to a minimum so that excessive flexing is reduced.

If proper push rod travel cannot be secured during the adjustment, it may be due to a defective slack adjuster, in which case the worm gear or the gear in the unit may be stripped. Sometimes the adjusting screw shaft may turn in the worm so that adjustment cannot be secured. If this condition is experienced, the unit should be replaced.

The cam shafts themselves may become frozen and contribute to inefficient braking, so these should be checked and freed with penetrating oil as required.

Slow Brake Application

IF THE brakes apply too slowly, the mechanic will first check the adjustment, then the lubrication of the above mentioned units, then the proper amount of pressure in the system as in the former case. In this case he will make a thorough check of leakage in compressor, lines and valves as the next procedure.

Slow application may be due to a restriction in the tubing lines or in any of the flexible hoses to the wheels. Service will require individual checks of air pressure at each wheel in order to determine the location of restricted lines. Excessive amounts of oil and water in the system would also contribute to this condition, so the mechanic will not only drain the system but determine the cause as outlined previously.

Slow release of the brakes may point to an improper adjustment, to frozen slack adjusters or cams, to rusted cam lobes. It may be due to weak retractor springs. A weak spring can be detected by examining its coils, which should be tight together when the cam is in the fully released position. Due to the extreme elongation of the springs with worn linings, these springs sometimes take a permanent set. For this reason new ones should always be installed when linings are replaced. Poor brake release may also be due to sticking cam shaft, to frozen anchor pins or to dry cam faces.

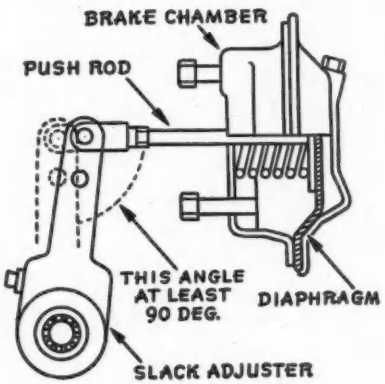
Here again, poor release may be caused by a restriction in the lines, either from dirt or accumulations of oil. Plugged exhaust ports on the brake valve, the quick release valve or on the relay valve can contribute to this condition. It may be due to an inoperative quick release valve.

Improper adjustment of the spring plunger on the brake valve may be responsible for slow release, in which case the brake valve will not return to the released position.

Unsatisfactory Operation

GRABBING brakes in most instances, can be attributed to either the lining or the drum conditions. It may be due to a broken brake spider or a support plate. The linings may be loose on the shoes, that is, the rivets may have become sheared or give way. There may be grease on the linings, a factor which shows up in either grabbing brakes or ineffective brakes. Out-of-round brake drums will show up in grabbing upon application, as will scored or heat-checked drums. If these conditions are not found upon tearing the wheel assembly down, the mechanic will make a check of cam shafts, cam faces and shoe alignment, as other possible causes of grabbing.

Cut away view shows operation of air brake chamber and the slack adjuster



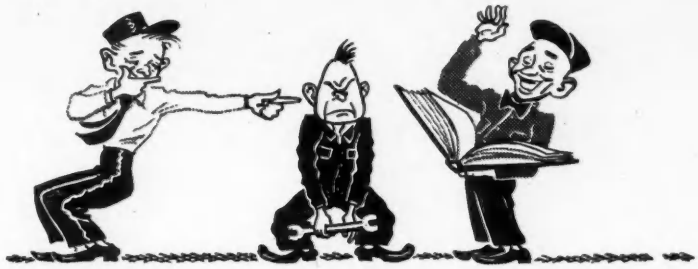
Uneven brake application or side pull is seldom found on heavy trucks, equipped with air brakes, but certain conditions may account for this. First, a check of adjustment and lining condition will be made. The brake shoe release spring and the brake chamber release spring will be inspected next. The diaphragm will be checked for leaking as this may be the cause. When replacing these units, always be sure the correct release spring is used. Actually, brake chambers should be replaced in pairs; otherwise uneven braking will result. If a new diaphragm is installed on the brake chamber, a new one should be used on the opposite side to keep braking even.

Loose wheel bearings are a common cause of erratic braking and one frequently overlooked in trouble shooting the system. Bearings should be checked and adjusted before the drum-to-lining clearance is set, as loose wheel bearings will show up in grabbing brakes or even side pull.

Noisy Brake Application

NOISY brakes may be due to a number of conditions. If the noise occurs on rough roads, it may be caused by weak retractor springs, a condition allowing the shoes to hammer back and forth between the drums and the cam faces. Noise on brake application may be due to loose liners or rivets. To test for loose lining, tap the lining on the side checking movement across the shoe. A dead sound appearing when tapping the rivets on the head will indicate that they are loose. Thin drums, glazed liners, and rubbing rivets on the drum will show up in noisy brakes. Poor lining contact with the drum will account for the same condition. If this is noted, a feeler gage or a brake drum gage will show where the trouble is. It may be due to scored drums, bell-mouthed drums, ordinary wear or grinding wheel marks left in the brake drums. Broken or misaligned brake shoes should also be considered as a possible cause of noisy brakes.

LAUGH IT OFF



Rate Clerk: "Say, where did you meet that blonde I saw you with last night?"

Bill Clerk: "I dunno. I just opened my wallet and there she was."

C C J

The cross-country truckie was stranded with a busted air compressor. Approaching a nearby farmhouse he knocked and asked permission to spend the night until the company mechanic came to repair his unit the next morning. The farmer obligingly put him up for the night.

The following morning the driver was invited to breakfast. While he was eating a large bowl of porridge, the family pig kept nosing around his legs and feet. Finally, the driver remarked to the farmer, "Quite an affectionate little fellow, this pig—eh?"

"Well, no, not exactly that," replied the farmer. "He is just waiting to eat. You see, you are using his bowl."

C C J

Jim, the shop Romeo, while waiting for his girl to finish dressing, got into a conversation with her little brother. "My, my," said Jim, "you're certainly an apt little boy. Is your sister apt too?"

"Yeah," replied the small fry, "she's apt to, if she's had a couple of drinks!"

C C J

Professor to Shop Foreman's son: "Tommy, will you give the class the definition of 'tidbit'?"

Tommy (very pensive for a moment): "Well, I can't give the definition, but one time I saw a calf get the devil kicked out of him on account of it."

C C J

PERSONNEL MGR.: "WHAT'S YOUR NAME?"

APPLICANT: "JULIE JONES, SIR."

P.M.: "I DON'T WANT YOUR NICKNAME. YOUR NAME MUST BE JULIUS JONES. (turning around) — "AND WHAT'S YOUR NAME?"

OTHER APPLICANT: "BILIOUS JONES, SIR."

C C J

Bus Driver: "Madam, I'll have to have full fare for that child. He's over five years of age."

Lady: "But he can't be. I have only been married four years."

Bus Driver: "Never mind the confession, Madam. Let's have the money."

Dispatcher: "Why is it, Bill, you always take your wife with you? I've told you repeatedly that it's against the rules. And, anyway, she's so ugly."

Trucker Bill: "Dammit, fellow, taking her with me is a lot less sickening than kissing her goodby!"

C C J

TRAFFIC COP: "WHERE YOU THINK YOU'RE GOIN', COWBOY? PULL OVER. WHAT'S YOUR NAME?"

DRIVER: "IT'S ON THE SIDE OF ME TRUCK."

COP (trying to read name): "IT'S OBLITERATED."

DRIVER: "YER WRONG, COPPER. IT'S O'BRIEN."

C C J

The sweet, young, and oh what a thing, had a little peke for a pet. But he was a bad dog, and besides, he suffered from Hydrantphobia.

He always imagined that every room in the house was full of hydrants. So the sweet, young, and oh what a thing took him to a dog trainer to break him of his bad habits, and after several days, he was returned.

"Do you think he will be clean around the house, now?" she asked, shyly.

"Well," replied the trainer, "if he ain't, all I can suggest is the lethal chamber."

"Yes," she said blushingly, "but do you think he will use it?"

C C J



"Everyone I try to rent it to asks the same silly question."

A sign in a famous restaurant proclaims: "We make every kind of sandwich in the world. Just ask for your favorite."

One night a wise guy demanded a whale sandwich. Temporarily confused, the waiter said he'd go speak to the boss about the request. After a bit, the waiter came back and reported, "The boss says he'll be damned if he'll cut up a whale just for one sandwich."

C C J

The inter-city driver came upon a highway accident, just outside a town known to be thickly populated with Scots. The victims, several in number, were still lying about the road, and he hurried about giving first-aid.

Along came a native who inquired: "Has the insurance mon been around yet?"

"No," was the driver's reply.

"Ah, weel then, I'll just lie doon aside this mon, if ye dinna mind," said the Scot.

C C J

DID YOU HEAR ABOUT DUMB DONALD? HE PUT IODINE IN HIS WALLET BECAUSE HE HAD A CUT IN HIS PAY.

C C J

Bill, an ex-navy trucker, was arguing with his wife about her changed appearance:

Wife: "When we were first married you said I had a shape like a beautiful ship."

Bill: "Yeah, I used to think that, but in the past year your cargo has sure shifted plenty."

C C J

The lunatic, after a very exemplary record of sanity, was discharged from the asylum and returned home. Deciding the next morning to shave, he nailed the mirror to the wall, stood before it, lathered his face, then selecting an old-fashioned razor, proceeded to shave.

At this moment the nail slipped; the mirror fell to the floor. He stood gazing at the blank wall before him, then remarked bitterly: "Just my luck, second day out and I've cut my blooming head off."

C C J

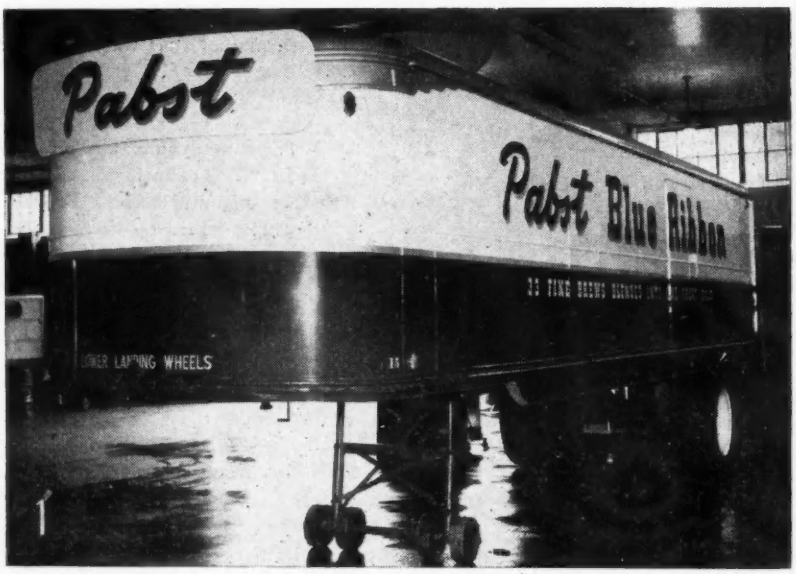
Resume Work





Hoffman's soft drink trucks carry own name, beer trucks are Pabst. Most unusual design is sliding door type which open on both sides. Except for "empties" on top appearance is almost as good as solid panels

BEAUTIFUL



1. Most striking of all Hoffman vehicles are the 30-ft. trailers. Color scheme is royal blue and pure white with aluminum stripe and top. Cost of paint jobs like this runs high, pays off in advertising

2. Design for lettering is pounced on masking tape from master stencil. Then principal and shaded areas are cut out by hand. Result is very-durable, sharply-defined lettering with slightly raised effect

FLEETMEN interested in the finest appearance obtainable for their trucks will find that Hoffman Beverage Co., Newark, N. J., now an operating subsidiary of Pabst Brewing Co., has all the answers. Fleetmen not willing to pay the price, either in dollars and cents or in the prodigious task of securing the requisite group of highly skilled craftsmen, will find the Hoffman story of little interest.

Fundamental Considerations

IT IS for the former group that this article is being written. It is for the men who can answer an unequivocal "yes" to at least these basic questions:

1. Can advertising dollars be combined with transportation dollars to produce an unmatched fleet of rolling billboards?
2. Can colors be selected for eye-appeal without regard to maintenance cost?
3. Can the paint shop be given the go ahead light without the necessity of cutting corners to hold down production cost?
4. Can washing frequency be maintained sufficiently high to hold the effect the paint shop produces?
5. Can vehicles be rerouted to the paint shop at intervals sufficiently frequent to catch the first sign of permanent discoloration?

Decision Vindicated

IN 1929 William G. Hoffman, then president of the company, did answer "yes" to all those questions. He established the present paint shop and backed up his decision by making truck appearance a personal hobby in which no stone was left unturned to achieve the goal.

Although Mr. Hoffman no longer has an active part in company affairs, his decision was vindicated during the past year when Pabst Brewing Co. took over the company and became so impressed with the Hoffman fleet that it was decided to standardize on the Hoffman finishing technique for the entire nation-wide



This five-year old coupe is typical of Hoffman passenger car fleet. Note Pabst emblem also used on cab doors

Beverage fleet tells how any operator can own striking "rolling billboards," and how he can keep them attractive, provided he is willing to pay the price

BODIES . . . What it Takes to Have Them





3. Sign painter touches up his masking before spraying main part of letters. Shaded areas are already cut



4. Ready for aluminum spray for top stripe and landing gear stencil, all other areas are meticulously covered

fleet. That part of the program is just getting under way, but for the 400-odd vehicles of the Hoffman fleet—which range all the way from 1946 models to 20-year-old model RD Pierce Arrows, with a goodly

(TURN TO PAGE 104, PLEASE)



FREE

USE POSTCARD—NO STAMP NEEDED

PUBLICATIONS

A selected list of the latest in literature — books, pamphlets, catalogs — chosen by the staff to help fleet operators solve maintenance and operating problems. Use the postcard.

L93. Service Manual

Here is a guide to electrical service classed by the editors as one of the best offerings that has been available to the fleet field for some time. This 20-page, illustrated publication will be an invaluable aid to mechanics and fleet operators in their program of getting more and better service from electrical equipment.

This manual is presented as a part of the Delco-Remy educational program and is designed to supply information which will enable the mechanic to check and adjust electrical equipment more efficiently and easily.

Beginning at the starter, the instruction outlines preventive maintenance and timely service steps on such units as the regulator, the generator, the starter, the distributor and other units in the ignition system. Photographs showing details of adjustments, checking and cleaning will enable the reader to obtain full benefit of the text. Schematic drawings of wiring diagrams, unit locations and testing instrument hook-ups serve to clarify the instruction.

The accompanying postcard, filled in with L93, will bring this publication to your shop.

L94. Spring Service Guide

For the first time in many months we are able to offer a publication devoted exclusively to the service of springs, featuring causes and cures of premature breakage. This handy, 30-page, pocket size booklet has been made available through the courtesy of a nationally known organization. It has been prepared expressly for the fleet operator as a guide to better spring service and inspection. It is yours for the asking.

"Tips on Spring Inspection and Service" is the result of the experiences of prominent fleet operators and the opinions of spring engineers, as published in recent issues of the leading automotive trade magazines. This material should be in the hands of all of those who inspect or have to do with the preventive maintenance and servicing of springs.

This guide will sell spring service to your men. Write L94 on the free postcard and add this helpful publication to your list of reference materials.

L95. Oil Filtration Data

Modern up-to-the-minute information on oil purification is now ready for the fleet operation in the form of a 12-page publication, "Oil Purification, Filtration and Reclamation." Fleet operators have shown considerable interest in this phase of lubrication and will want to study this data carefully as a step in their program of prolonging the useful life of lubricating oil.

The author discusses three possible characteristics of used oils and reviews three ways of removing foreign materials from oils—gravity purification methods, filtering and reclaiming. A full-page chart is included showing the comparison of these methods so the fleetman can draw his own conclusion with regard to the best method.

The author concludes that whatever method is selected must be able to provide an oil which will perform the function for which the new oil was designed and recommended.

This data contains a wealth of pertinent facts on a subject of great interest to fleetmen. Write L95 on the free postcard and secure a copy now.

L96. Instrument Service

Few manuals develop directions for the service and maintenance of such instruments as the ammeter, oil pressure gage or the fuel gage sufficiently for the average mechanic to complete the job efficiently. Accordingly we have selected a manual which has been prepared especially for the mechanic as a guide to removing, disassembly, trouble shooting and checking of such gages, and we think it a valuable contribution to the field. Every shop will want a copy.

The manual gives an appreciation of the operation and importance of each instrument—then a trouble shooting chart with possible troubles and their remedies. Most conditions are illustrated with detailed photographs for the convenience of the reader.

The booklet is easy to read and the material quickly assimilated. Get a copy at once by writing L96 on the free postcard.

L97. File Holder

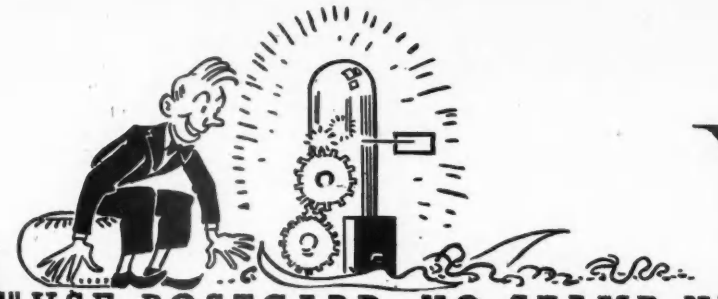
A new reference file holder featuring timely information about necessary forms, records and reports required of truck fleet operators is announced as now available.

This four-page folder presents clearly and concisely the many necessary forms and reports which are conducive to better fleet operation. Every fleet office will want to look them over.

In addition to such supplies as log books, log book holders, driver's physical examination certificates and all the required ICC report forms the File Holder presents a summary of complete accounting records for motor transport operators.

Complete outfits such as this will save money and time, standardize records and present the required records for ICC in just five complete account books. Each is fully described in the File Holder.

Get your copy today by writing L97 on the free postcard.



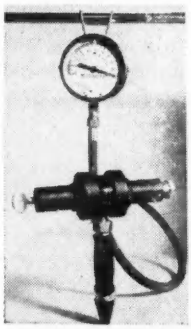
USE POSTCARD—NO STAMP NEEDED

NEW PRODUCTS

The newest in replacement parts, accessories, shop equipment and supplies. For more details of products described and illustrated on these pages, use accompanying free postcard.

P150. Condition Gage

An engine condition testing gage known as the Motorstat is introduced by the F. T. Griswold Mfg. Co., Wayne, Pa. The instrument consists basically of an air valve with pressure regulator fitted with connection to shop air line, a neoprene adapter which fits into the spark plug opening and an air gage calibrated in percentages from 0 to 100. In operation, air is introduced into the cylinder with valves closed and loss through leaking valves, worn rings, cracked block or head or even a leaky fuel injector is quickly detected on the gage.



Use Free Postcard For More Details.

P151. Spray-on Polish

Plaze, a new polish designed for application by spray gun, is announced by The Plaze Co., St. Louis. Plaze is said to contain 17 active ingredients which assure high long-lasting lustre and maximum protection. The company states that once a car has been cleaned, the polish may be sprayed on in three minutes, and after drying may be wiped off in 15 minutes.

Use Free Postcard For More Details.

P152. Safety Innertubes

Production of its Seal-O-Matic puncture-sealing safety tube, interrupted by the war, has been resumed by The B. F. Goodrich Co.

A gum-like rubber compound inside the Seal-O-Matic tube is said to surround and grip puncturing objects so that no air escapes. When the puncturing object is removed, the gummy sealing substance flows into the hole, sealing it immediately and permanently. In addition to the sealing compound, the tube is built with 4 per cent thicker wall than ordinary tubes.

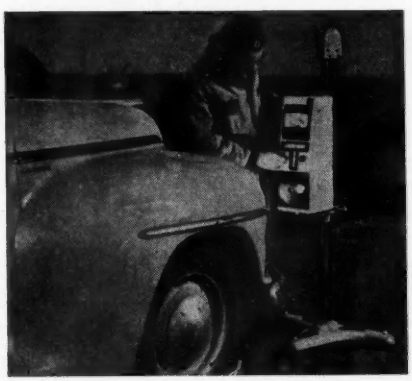
Due to the added tube wall thickness, air retention and resistance to shock and pinching action are much greater.

Use Free Postcard For More Details.

P153. Headlight Tester

A new Model WX-40 Rayoscope Headlight Tester is announced by Weaver Mfg. Co., Springfield, Ill. It shows side aim and drop, measures candlepower, and shows beam pattern.

The Rayoscope can be lowered to within 12 inches of the floor, or can be raised



to 54 inches to accommodate *all* headlights. The entire unit is guided on two level steel tracks fastened to the floor. It is fast operating, with all adjustments, meters, beam patterns, viewing window and alignment sight convenient to the operator.

Use Free Postcard For More Details.

P154. New Slack Adjuster

Designated as "Type 15," a new Slack Adjuster has been released by the Bendix-Westinghouse Automotive Air Brake Co., Elyria, Ohio. Superseding previous units within its rated capacity of 15,000 in.-lb., the new model features a scientifically ground worm and gear which permits much finer settings. A sleeve, providing a positive and automatic lock for the adjusting screw, is another improvement. A special, heat-treated alloy steel is employed in the housing of the adjuster which is especially designed and tested to perform with an exceptionally wide margin of safety in the most grueling service.



Use Free Postcard For More Details.

P155. Pressure Regulator

A. Schrader's Son, Division of Scovill Mfg. Co., Inc., Brooklyn, N. Y., announces a new air regulator adjustable to function in systems operating at pressures from 150 to 10 lb. p.s.i. Many of these regulators can be used in a system. One for each tool or air-operated machine, is recommended because the difference between live pressure and operating pressure is ordinarily wasted. The regulator is furnished with a pressure gage.

Use Free Postcard For More Details.

P156. New Wrenches

Stevens-Walden, Inc., Worcester, Mass., manufacturers of the Walden-Worcester

(TURN TO NEXT PAGE, PLEASE)

NEW PRODUCTS

IN USE POSTCARD—NO STAMP NEEDED

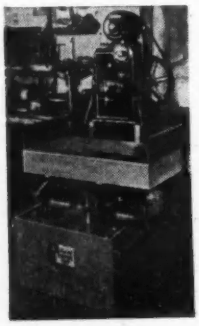
(CONTINUED FROM PAGE 57)

line of wrenches has evolved a new type of socket wrench made by a force forming process wherein the alloy steel is drawn cold under very heavy pressure. This is said to eliminate burrs, undercuts, recesses, tears and checks. The basic superiority of force formed sockets lies in the fact that the fibres are lengthened and strengthened in the process not broken or interrupted.

Use Free Postcard For More Details.

P157. Wet-Cutting Unit

A new wet-cutting conversion unit for use on Sunnen bushing grinders has been announced by the Gray-Mills Corp., Evanston, Ill. The wet-cutting system can be attached to the grinder in 20 minutes without cutting or drilling and is said to result in faster honing time, greatly increased stone and mandrel life, less stone glazing and smoother finish. A fractional h.p. centrifugal pump which is not affected by abrasives is mounted in a 12 gal. coolant tank, and pumps cutting oil to the work through oil-resisting neoprene lines. A flexible metal nozzle, for directing the flow onto the work is included.



From the work the oil flows to a return pan which slides in place beneath the mandrel. The pan has removable splash shields. Here the bulk of the abrasives are separated from the fluid by a baffle plate before flowing back to the pumping unit for re-circulation.

Use Free Postcard For More Details.

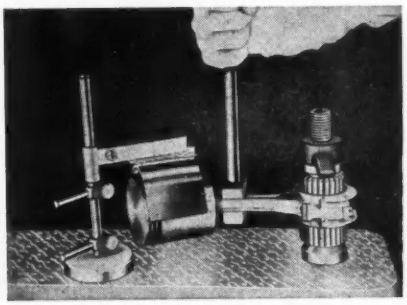
P158. Fuse-in-Line

The Signal-Stat Corp., Brooklyn, N. Y., is featuring a new line of ready-wired fuse receptacles which may be easily spliced into any circuit at any place. Known as the "fuse-in-line" receptacle, the product needs no fuse block and permits easy replacement of fuse elements.

Use Free Postcard For More Details.

P159. Con-Rod Tool

A new "Checking Vee" to simplify the job of accurately checking rods for bend and twist is announced by the K. O. Lee Co., Aberdeen, S. D. Used in conjunction with the company's "Knock-Out" rod aligner it is designed particularly for use on pistons (such as Ford V8) which do not have flat head and have only a small flat surface against which it is difficult to check by ordinary methods.



The new "Checking Vee," placed on the piston, provides a 3 in. precision-finished surface against which to check with the regular indicator.

Use Free Postcard for More Details.

P160. Improved Battery

A newly-designed six-volt extra-duty Exide battery for commercial use is announced by The Electric Storage Battery Co., Philadelphia. The new battery has the following features: Over-size plates, double insulation with Vitrex and treated wood, red polystyrene, dirt-proof vent plugs, electrolyte leveling device, over-



size inter-cell connectors and positive cover seals. The battery is assembled in a hard rubber container.

Use Free Postcard For More Details.

P161. Motor Stand

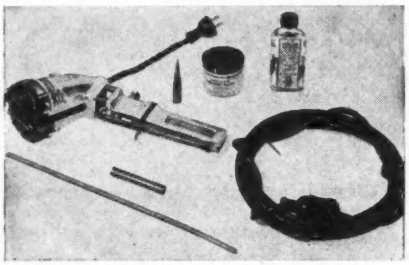
Featured in new literature released by the Manley Mfg. Div. of American Chain & Cable Co., Inc., York, Pa., is the Manley universal motor stand. The stand handles all engines not exceeding 2000 lb., with standard attachments furnished at no extra cost.

A 6 to 1 gear ratio makes handling engines a one-man operation. Stand can be turned a full 360 deg. and can be stopped and braked with positive cone clutch.

Use Free Postcard for More Details.

P162. Metal Spray Gun

The Emess "hi-heet" metal spray gun, featuring a patented cast iron head which



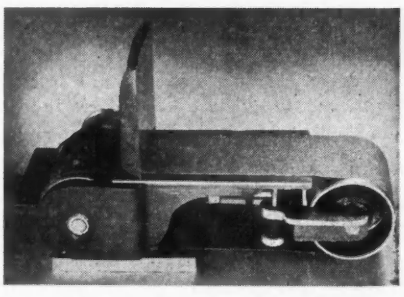
heats to 1000 deg. F. in 2½ minutes, is now available from Emess Tool & Chemical Co., New York. Other features include flat mica heating element, three-point insulation which keeps handle cool and a long trigger which greatly reduces blotching. Available for 110 or 220 a.c. or d.c. current. Kit including mercury paste and solvent is recommended.

Use Free Postcard For More Details.

P163. Belt Sander

An improved bench model belt sander and tool grinder is offered by Woods Engineering Co., Norwalk, Conn. It is easily adjusted for either horizontal or vertical operation and has a platen work area of 5 in. x 8½ in.; standard abrasive belt is 4 in. x 36 in. Pulleys are 4 in. x 4½ in. machined aluminum, ball-bearing and perfectly balanced for smooth operation. Pulleys are tested to 5000 r.p.m. and simple thumbscrew control is provided for belt tracking and tension. Work dam is adjustable to any angle; work platen is reversible and can be used on either face.

Occupies a bench space 9 in. x 15 in.



and weighs 17½ lb. net. List price $39.95 complete with one belt and small positional dam.

Use Free Postcard for More Details.

P164. Flexible Shaft Tools

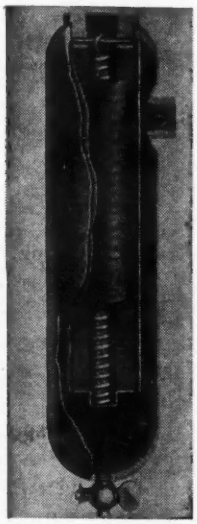
New tools, adaptable for connections to flexible shafts driven by fractional-horsepower motors, and used for filing, grinding, hammering, and similar operations in precision work, are now being manufac-

tured by the Speedo Mfg. Co., New York.

The Speedo Filing handpieces are gear driven and operate at speeds from 1000 to 3000 rpm delivering from 500 to 1500 strokes per minute.

Use Free Postcard For More Details.

P165. Air Filter



The Skinner A-1 Air Filter, manufactured by Skinner Purifiers, Inc., Detroit, removes free water and other impurities of ten microns and larger, thus preventing the formation of ice in pipes and hoses. For this reason it is especially suited for air brakes installations. Operating on the pricipal of edge filtration, the filter is simply constructed, and uses a disc type filter element, made from phenolic-resin-impregnated cellulose discs stacked one upon the other and held together under spring tension. The air to be filtered passes between the discs, not through them and deposits its impurities on the outside edge of the discs where they can be cleaned off with solvent.

Use Free Postcard for More Details.

P166. Parts Cleaner

A new automatic cold tank parts cleaner is announced by Turco Products, Inc., Los Angeles. Known as the Turco Model A Turbulator, it utilizes a liquid flow actuated by air volume, pressure differential and gravity. It cleans with a combined liquid scrubbing and solvent action.



The model A is the first of four planned Turbulator models, the other three to become available soon. It is sturdily constructed with no moving parts to wear out or replace. Dimensions: Working space dimensions are 36 in. x 18 in. x 16 in.; overall dimensions are 48 in. x 24 in. x 24 in.; working capacity, 104 gallons.

Use Free Postcard For More Details.

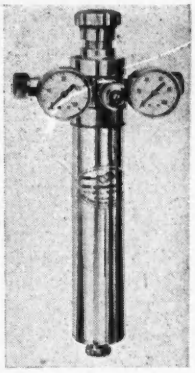
P167. Safety Alarm

A safety device for trucks and buses with air brake systems has been developed by the Mu-Switch Corp., Canton, Mass. Called the Robox, the new device sounds the horn and shuts off the motor in the event of mechanical failure or mis-operation at any one of five critical points. These points are: air brakes, engine thermostat, oil lines, emergency brake and emergency exit.

Use Free Postcard For More Details.

P168. Air Conditioner

The Black Mfg. Co., Baltimore, has a new model N-200 air conditioner for use with spray painting equipment.

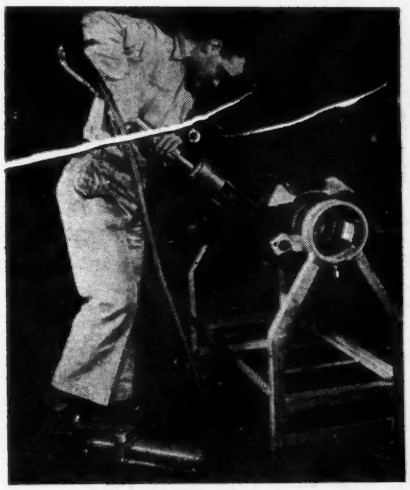


It handles two-gun operations and passes 30 cu. ft. of air per minute at 60 lb. operating pressure. Long life is assured by use of an oxygen-type forged brass regulator, designed to handle many times the working pressures required in normal service, and an extruded aluminum tube which eliminates the possibility of rust and corrosion. Outlet fittings are ¼ in. standard pipe thread. Inlet fitting is ⅜ in. pipe thread.

Use Free Postcard for More Details.

P169. Sleeve Puller

The Chicago Pneumatic Tool Co., New York, announces a new sleeve puller for installing and removing cylinder sleeves in Ford V-8 85 and 90 h.p. engines. Designed as an accessory for its CP-700 "Pneudraulic Pump," it is said to center automatically and to assure proper alignment of sleeve, block, and puller. Smooth ram action eliminates distortion of the



sleeve and damage to the cylinder sidewall resulting from makeshift hammering methods. The tool weighs 20 lb., is easy to set up, and may be used whether the engine block is in or out of the car.

Use Free Postcard For More Details.

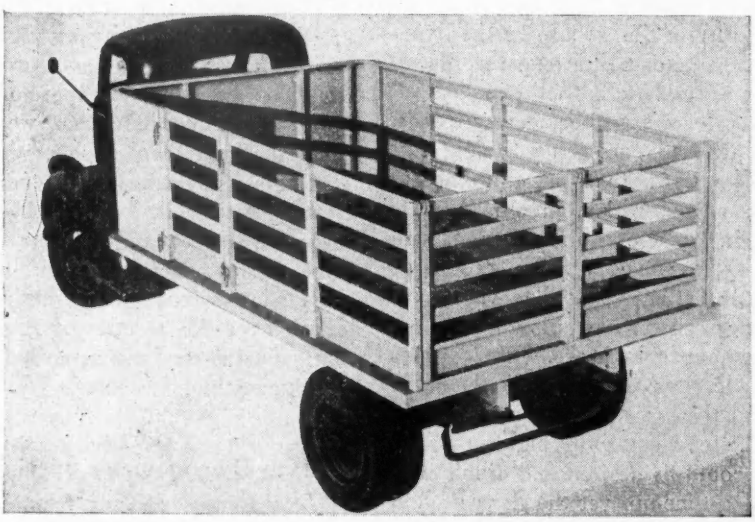
P170. New Flex-Lites

A new series of "Flex-Lite" flashlights has been introduced by the Aero-Motive Mfg. Co., Kalamazoo. Each of the three new models has a long flexible extension bulb-retainer by means of which shadowless light may be introduced into heretofore inaccessible areas. Made of polished aluminum and waterproofed. Price range, $1.50 to $2.95, less batteries.

Use Free Postcard For More Details.

(TURN TO PAGE 158, PLEASE)

P166a. All Steel Rack Bodies



As a companion piece to its knocked-down custom-styled van, Krieger Steel Sections, Inc., Long Island City, N. Y., is offering a new series of all-steel rack bodies. A 12-ft. model, weighing 1300 lb. is now available with larger models to follow. The 16-gage steel front bulkhead is quickly removable to convert to platform body when desired. Other features include gate post of 2 x 2 in. drawn steel tubing, two rear racks which lock together and to sides to prevent "bellying," and 12-gage welded steel floor frame



CCJ FLEET STUDY

DIVIDED INTO 6 PARTS

This article: No. 5 Dynamometer Tune-ups
6. Engine Rebuilding

1. Dispatching (See October, 1946)
2. Maintenance Control (December, 1946)
3. Tire Maintenance (See January, 1947)
4. Driver Training (See February, 1947)

Dynamometer

Smoother Engines, More

"No power" and other engine complaints easily discovered with dynamometer, which this fleet also uses systematically for tune-ups and as part of "B" PM checks

by ***MARTIN SCHOENBACHLER***

Louisville Garage Foreman, Silver Fleet Motor Express, Inc.

ONE OF the most common, exasperating and indefinite complaints that the garage gets from the driver is the cryptic statement "No power."

We, of course, don't always expect the driver to know exactly what is wrong with his engine, although most of them know about where the trouble lies when they make out a mechanical report on their tractor.

Often we discover that the driver who makes out a "no power" report is not the only one who doesn't know what the ailment is when we check it and find nothing wrong; at least, nothing shows under routine check.

For that reason, we send almost all "no power" and tune-up checks to our dynamometer machine, where an experienced operator puts the unit through its paces.

A Baffling Case

EVEN on the dynamometer it is not always easy but we always win in the long run; unless it was like one "no power" report which really had us baffled.

On this particular "no power" report we put the tractor on the dynamometer and it threw up records almost immediately that equalled all of its former performance records. Compression, cam angle, timing, heat and on down to turning up nearly 3000 r.p.m., which, in our shop, is the final test of horsepower. If you can get the factory r.p.m. rating, or a little better, you will always have the horsepower and this goes for the dynamometer checks. We always find low r.p.m. with all the little things that cause loss of power.

This particular unit had everything that could be desired and didn't even need a tune-up, yet the driver again complained that the engine "had no power." This went on for some little time until another driver innocently inquired if we had ever succeeded in restoring the power performance of this unit. When asked what he knew about it, he said, "Nothing." Then he mentioned casually that two of our trucks had come up behind this unit, which was heavily loaded. These two trucks being lightly loaded and dead-heading, soon gave the first truck the "blow by." When the loaded driver couldn't keep in sight of them, he was sure that something was wrong with his engine and promptly complained.

But, nevertheless, all fleets have these "no power" complaints, and all drivers make them in good faith.

The dynamometer is located in the Louisville shop, and probably 85 per cent of the rolling stock used in the entire system goes through Louisville. Engine rebuilding and other rebuilding operations are carried on in the Indianapolis shop.

While the dynamometer test is a part of the B check of our preventive maintenance schedule, we regularly use it for tune-up jobs and for all "no power" complaints.

We do not use previous performance comparisons as much probably as most dynamometer operators do. One reason may be that we have used the equipment so long that we can bring an engine up to peak performance speedily without it. However, we do keep all previous sheets and, in instances when we have a particularly recalcitrant engine we check over the records of past performance as we have recorded them by dynamometer checks.

Have Dynamometer Specialist

WHILE most of our maintenance mechanics can make checks of equipment on the dynamometer, we have allowed one man to specialize on this work. This has worked out to our advantage.

Having a man specializing in dyna-

Dividends:

Power with Less Fuel

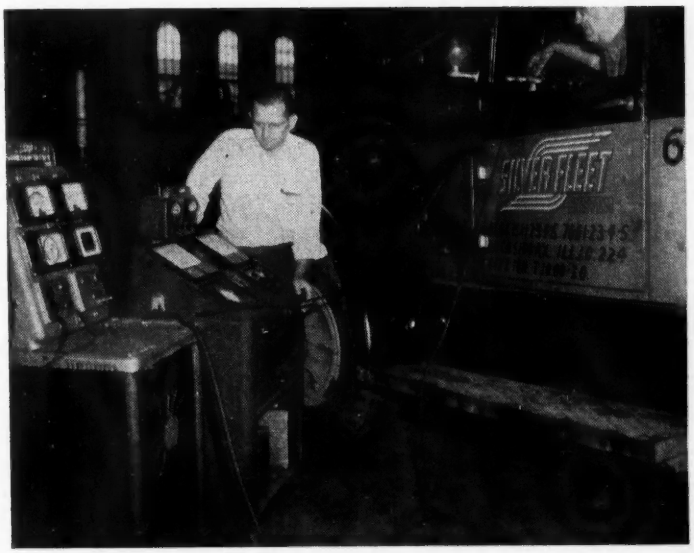


mometer checks has speeded up getting units on and hooked up, because the man that does it a dozen times a day can get it down to a system. We have also found that he becomes more familiar with the characteristics and ramifications of an engine, as viewed by dynamometer readings, which helps to eliminate constant checking against previous figures.

Another thing that becomes more readily apparent to him is the significance of a reading. For instance, a variation of more than 10 lbs. in compression readings usually indicates valve or ring trouble of some kind. But we discount this somewhat if the engine is cold and the speed is slow. We take compression readings that count when the engine is fully warmed up to load temperature, and at a comparatively high speed and under a fair load. Compression readings have a way of smoothing out at this point, and it gives us a fairer indication of how the unit works when it is out on the road pulling its load.

Having a regular man to operate the dynamometer gives him a chance to memorize most efficient engine speeds and this has resulted in getting quicker results. We have found that an engine which will not turn up to the r.p.m. listed by the manufacturer, or to an arbitrary r.p.m. which we have set, will never have the power that it should have. So we stay with a unit until it delivers the proper r.p.m. and find that when an engine has its required r.p.m., there's nothing much wrong with it.

Even if a unit goes to the dynamometer for a tune-up, it always gets the full scope of the service. Drive shafts are checked for vibration, differential and transmission will make their troubles known by the noise they make, and the entire operation of the unit is observed and checked.



Martin Schoenbachler, garage superintendent, Louisville & Southern Division, checks dynamometer readings with machine operator

As is well known, the dynamometer provides means for operating a tractor as though it were on the road, simulating road and load conditions.

Bad wheel bearings easily show up under actual load conditions, springs, bad shackles and other conditions often become apparent under the vibration of pulling a heavy load at full governed speed.

Two Important Checks

TWO important features of servicing become easy to see on the dynamometer check stand. One is the action of the fuel pump when operating at full speed under full load. We find that pumps which apparently check out all right often fail to send up enough fuel under this condition. This is easily rectified and makes for much better and more economical performance.

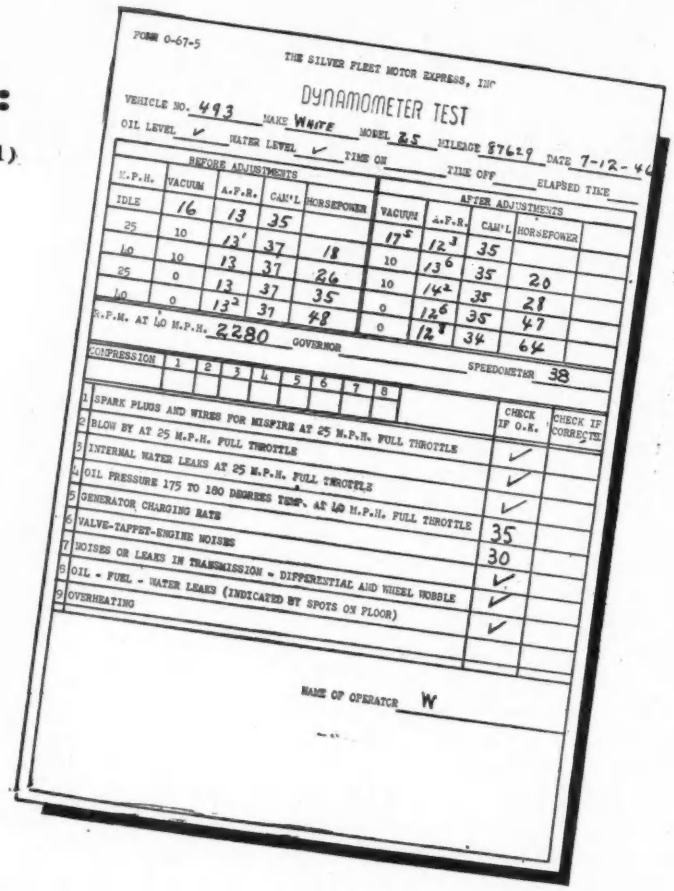
The other feature is the ease with which leaks may be observed. There are so many leaks that only occur when a unit is operated on the road that they are almost undetectable in the shop under ordinary conditions.

We take special precautions to see that no grease spots and other evidences of leaks go neglected when a unit is on the stand. We often catch an oil leak that only develops under heavy and severe operating conditions. Water leaks, gasoline leaks, lubricating oil—all get particular observation and correction.

(TURN TO NEXT PAGE, PLEASE)

Dynamometer Dividends:

(Continued from Page 61)



FORM 0-67-5

THE SILVER FLEET MOTOR EXPRESS, INC

DYNAMOMETER TEST

VEHICLE NO. 493 MAKE White MODEL 85 MILEAGE 87629 DATE 7-12-40

OIL LEVEL ✓ WATER LEVEL ✓ TIME ON _____ TIME OFF _____ ELAPSED TIME _____

BEFORE ADJUSTMENTS					AFTER ADJUSTMENTS				
M.P.H.	VACUUM	A.F.R.	CAM'L	HORSEPOWER	VACUUM	A.F.R.	CAM'L	HORSEPOWER	
IDLE	16	13	35						
25	10	13'	37	18	17⁵	12³	35		
40	10	13	37	26	10	13⁶	35	20	
25	0	13	37	35	10	14²	35	28	
40	0	13²	37	48	0	12⁶	35	47	
					0	12⁸	34	64	

R.P.M. AT 40 M.P.H. 2280 GOVERNOR _____ SPEEDOMETER 38

COMPRESSION 1 2 3 4 5 6 7 8

		CHECK IF O.K.	CHECK IF CORRECTED
1	SPARK PLUGS AND WIRES FOR MISFIRE AT 25 M.P.H. FULL THROTTLE	✓	
2	BLOW BY AT 25 M.P.H. FULL THROTTLE	✓	
3	INTERNAL WATER LEAKS AT 25 M.P.H. FULL THROTTLE	✓	
4	OIL PRESSURE 175 TO 180 DEGREES TEMP. AT 40 M.P.H. FULL THROTTLE	35	
5	GENERATOR CHARGING RATE	30	
6	VALVE-TAPPET-ENGINE NOISES	✓	
7	NOISES OR LEAKS IN TRANSMISSION - DIFFERENTIAL AND WHEEL WOBBLE	✓	
8	OIL - FUEL - WATER LEAKS (INDICATED BY SPOTS ON FLOOR)	✓	
9	OVERHEATING		

NAME OF OPERATOR W

While dynamometer tests may be made at any time poor performance shows need, all trucks are dynamometer-tested on B check

Better Timing Adjustment

WE FIND that timing can be set better while making a test on the dynamometer. We regularly set the timing after an engine has been warmed up—and after routine checks have been made of other features such as plugs, cam angle, condenser—and then, having completed the tune-up operation, set the timing while pulling a full load at between 25 and 40 m.p.h.

Here is an excellent opportunity to check the automatic advance of the distributor. Once the timing is set, the unit is then operated under conditions that simulate a full load—stopping, starting, gear changing and on up to level road, and then up a hill. This feature has been responsible for much of our high degree of driver satisfaction.

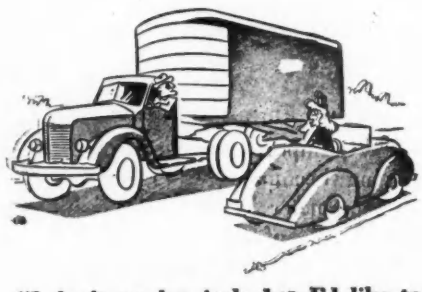
Every now and then an engine will develop something that is not readily diagnosed. These are the units that come in with "no power" reports. Much of this may be in the timing and irregularity of some kind in the vacuum advance.

We had one on the stand the other day that ran perfectly at all speeds, until it was put on a load. Under simulated load conditions, it ran regularly without skips of any kind but was just exactly the kind of unit the driver wrote up for "no power." It had everything but power. According to the dynamometer readings, and according to all the instruments which are not recorded on the dynamometer blank, there was nothing wrong with the engine—except it did not have the power. When idling, it would deliver the required r.p.m. Under load it would hang on and pull, but acted light after that was out on his feet. It had absolutely no power.

When we changed the carburetor, we restored the power. Under ordinary conditions, we would not have changed the carburetor because it was serviced a short while before.

Examination of this particular carburetor disclosed that the vacuum piston that opened the power jet was not operating properly and consequently, the engine could not pull its rated load.

Another feature of our use of the dynamometer, and the practice of keeping the same man on it, is that our drivers have a great respect for the work done on the machine. They like it. They often watch the amount of work scheduled for it by the yellow tickets, which indicate jobs. When an opportunity presents itself to get on and off, they ask that we give their units a check and a tune-up.



"I don't need a jack, but I'd like to borrow you."

We find that drivers often are reluctant to report minor troubles having to do with the operation of the engine but, rather, save them up and get all the bugs out with one dynamometer check.

Many drivers like to watch the work done on their own vehicles and, often, are able to give us invaluable aid at that time by describing in detail some of the peculiarities which cause them trouble.

Engines that are properly timed and adjusted, not only deliver more power to the rear wheels, but also deliver a fuel record that means efficient and economical operation.



IHC Point System

for Figuring Maximum G. V. W.

Scheme has five major variables, shows how loads may be boosted safely as much as 39%

HOW MUCH can a given truck carry? What constitutes an overload? Few fleetmen and few truck manufacturers will fail to recognize these questions as highly debatable points since the day they first purchased or sold a truck.

The gross vehicle rating was a long step in the right direction. It was far more accurate and far more informative than the old nominal ton-capacity rating. But it still failed to provide a variable for different operating conditions. As a protection to the seller the gross vehicle rating had to be set up on the assumption that the truck would be operating under severest possible conditions, despite the fact that many vehicles lead a highly pampered existence and can thus carry considerably more load without *overload.*

IHC Develops New Plan

TO the International Harvester Co. goes credit for a new plan which provides a yardstick for measuring these variations in operating conditions. Under the new system a marked distinction is drawn between the truck which will be used as a city street sprinkler, for instance, and the same vehicle which will operate as a dump truck in severe off-highway tasks. Assuming that both trucks have a g.v.w. rating of 20,000 lb., the city sprinkler could safely and economically carry about 6000 lb. more load than the dump truck and still would not be overloaded.

The new International plan is based on a point rating of fatigue factors

(TURN TO PAGE 148, PLEASE)

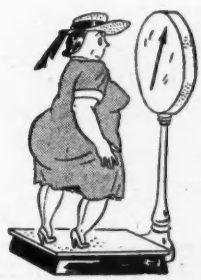
TYPICAL APPLICATIONS OF IHC POINT SYSTEM

		Dump Body Operations				Tractor Operations		General Trucking	
Fatigue Factors	POINTS	Rock Moving	Dirt Moving	Gravel Haul	Coal Delivery	Moderate Serv.	Severe High Speed Mountainous	Dept. Store Delivery	City Water Sprinkler
Type of Terrain Off-Road Fair Roads Good Roads	5 3 1	5	4	2	1	1	1	1	1
Road Speed Over 50 m.p.h. 40 to 50 m.p.h. 25 to 40 m.p.h. Under 25 m.p.h.	3 2 1 0	0	0	1	0	2	3	1	0
Type of Loading Severe Moderate Normal	5 2 0	5	4	2	2	0	0	0	0
Nature of Load Static Slowly Diminishing Quickly Diminishing	2 1 0	2	2	2	2	1	2	1	0
Gear Shifting Extreme Moderate Normal	3 2 0	2	2	1	0	2	3	0	0
TOTAL		14	12	8	5	6	9	3	1
CLASSIFICATION		E	D	C	B	B	C	B	A

Table above shows arbitrary point values assigned for varying "fatigue factors" and point value applications in various types of service. Example: Coal delivery truck operating on good roads (1 point), under 25 m.p.h. (0 points), with moderate loading (2 points), static load (2 points) and normal gear shifting (0 points), would accumulate total of 5 points. Table below shows this operation would be in Class B which allows 20 per cent overload. If this truck were in off-road service (5 points) total points would be increased to 9, putting operation in Class C for 15 per cent overload

CLASSIFICATION TABLE

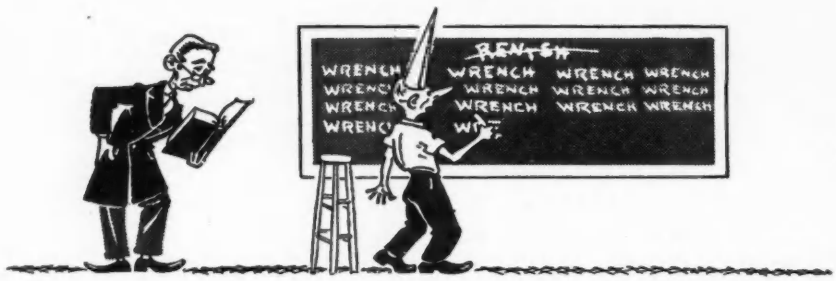
0 to 2 pts. = Class A = G.V.W. + 30%
2½ to 6 pts. = Class B = G.V.W. + 20%
6½ to 9 pts. = Class C = G.V.W. + 15%
9½ to 12½ pts. = Class D = G.V.W. + 10%
13 pts. or over = Class E = G.V.W. No increase



CCJ QUIZ

by ROBERT F. BAHL

Answers on Page 67



Every question in this quiz begins with a "why?" If you can answer them all, you must be "wise" indeed. You'll want to murder us for the pun, but let's just forget it. 70 is fair; 80, good; 90, excellent; 100, perfect. Go ahead and answer the questions and then check the answers on page 67.

1.

Why do gasoline trucks often have a chain dragging behind?

a. To warn the motorist behind not to come too close.

b. To serve as a tow chain in case a car is disabled (good advertising for the gas company).

c. To carry static electricity from the truck.

2.

Why is there a tiny hole in a gas tank cap?

a. To prevent the formation of a vacuum within the tank.

b. Air must be mixed with gasoline to produce combustion.

c. To enable gasoline fumes to escape.

3.

Why is gasoline containing tetraethyl lead red in color?

a. Red lead is used.

b. Reaction between the lead and gasoline produces a reddish tint.

c. For identification.

4.

Why do tires on the right side of a truck wear more rapidly than those on the left?

a. Because the driver sits on the left side.

b. Because most roads are crowned.

c. Because sidewalls scrape against the curb in parking.

5.

Why are front wheels further apart at the top than at the bottom?

a. So the wheels will be vertical when the truck is in motion.

b. To provide extra space for the engine.

c. To compensate for play in the steering gear.

6.

After a hard drive, why should a hot engine be idled before turning off the ignition?

a. To protect against vapor lock.

b. To save wear on the pistons.

c. To prevent "seizing" of engine parts.



"I *did not* say it was horsemeat! I said, gimme a pound of steak and be sure to cut the shoes off!"

7.

Why do you so seldom hear of carburetor trouble on a diesel engine?

a. Carburetors on diesel engines are generally built more sturdy.

b. Diesel fuel does not gum up the carburetor as gasoline does.

c. There is no carburetor on a diesel engine.

8.

Why shouldn't tires be stored where electric motors are in operation?

a. A spark from the motor is liable to set the tires afire.

b. Vibration causes the molecules in the rubber to break down.

c. Electric motors give off ozone.

9.

Why must alcohol as an antifreeze be replaced at intervals?

a. Its boiling point is lower than that of water.

b. It expends its energy in the cooling process.

c. It becomes "stale" upon standing.

10.

Why should chains never be used on front wheels?

a. Unless it is a four-wheel drive truck, there is no motive power in the front wheels.

b. They hamper steering.

c. They would cause the vehicle to skid when brakes are applied.

★ SCORE CARD

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Around the corner from *You*



In addition to fuel for transportation, home and industrial heating, the petroleum industry this year will bring the convenience and cleanliness of liquified petroleum gas to 3-million homes located beyond city gas mains. This relatively new service ultimately offers better living in 20,000,000 non-urban homes.

MOTHER NATURE applied the cookie jar technique to oil. Most of it, she hid away, out of easy reach. Yet, gasoline and oil are two of the most conveniently available commodities you buy—and low in price. The explanation lies, of course, in the marvelously efficient distribution system of the petroleum industry—comprising producers, refiners and marketers. All three use thousands of Super Power Whites. Correctly selected for the work they do, properly maintained and skilfully manned, they are *precision tools of transportation.* These three factors will increase the distribution efficiency of any truck-using business, large or small. They are the basis of The Continuing Control System of Truck Management, which our White Representative will gladly explain in terms of your own transportation requirements.

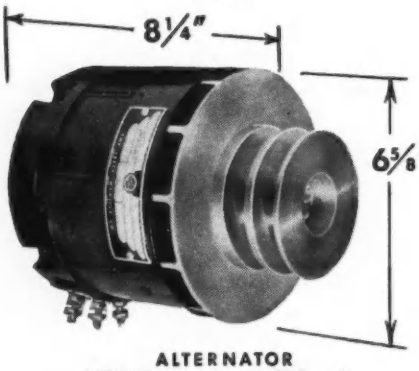
White

THE WHITE MOTOR COMPANY
Cleveland, Ohio, U. S. A.
THE WHITE MOTOR COMPANY OF CANADA, LIMITED
Factory at Montreal

FOR MORE THAN 45 YEARS THE GREATEST NAME IN TRUCKS



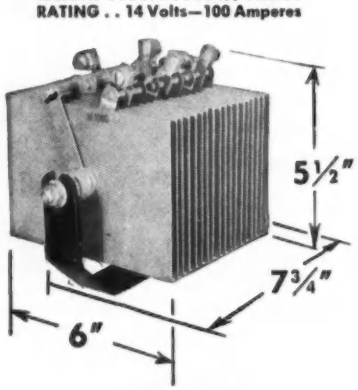
Keeps your batteries UP!
Keeps your costs DOWN!



ALTERNATOR
WEIGHT . . . . . 31 Pounds
RATING . . 14 Volts—100 Amperes



3-ELEMENT VOLTAGE REGULATOR
WEIGHT . . . . . 4¾ Pounds
RATING . . 14 Volts—100 Amperes



RECTIFIER
WEIGHT . . . . . 7 Pounds
RATING . . 14 Volts—100 Amperes

[Similar 3-unit system available for 6-volt service. SYSTEM WEIGHT: 41 Pounds. RATING 60 Amperes, 420 Watts]

Read how this high-output, 12-volt power plant pays for itself many times over

● If you need extra-high current output at slow engine speeds, fast engine speeds or both to keep batteries up, consider the money-saving advantages of this new A-C generating system by Leece-Neville. Its 100 ampere output over an engine's *entire speed range,* always available when suitable drive ratio is provided, can *keep* a sound battery in fully charged condition as long as it lasts. And permit the addition of electrical accessories without overloading!

System weighs *60% less* than D-C equipment of comparable rating—can be installed with lighter brackets, less support. Alternator of simplified, trouble-free design occupies less space than conventional D-C generator. And with all these important advantages, this amazing A-C system costs less than comparable D-C equipment! For complete details of this new kind of power plant, write *The Leece-Neville Company, Cleveland 14, Ohio.*

LEECE-NEVILLE
Pioneer and STILL Quality Leader

CRANKING MOTORS • GENERATORS • VOLTAGE REGULATORS • SWITCHES

Quiz Answers

CCJ Quiz on P. 64

1. c. The chain is supposed to act like a lightning rod, carrying off to the ground any charge of static electricity that might cause an explosion.

2. a. If it were not for the vent hole, a partial vacuum would be created inside the tank as gasoline was drawn off. The fuel pump would not be able to overcome the vacuum.

3. c. The color is added so that it can be distinguished from other gasoline.

4. b. The contour of the road is the cause of the uneven wear. Most roads are crowned to some extent, thus shifting a greater percentage of the load on the right side.

5. a. This outward tilt of the wheels at the top is known as "camber." When the camber is right, the wheels will be straight when the truck is running, as the motion of the truck has a tendency to cause the wheels to spread at the bottom.

6. a. In very hot weather or after driving in mountainous country, the engine should be idled before the engine is turned off. This prevents "vapor lock," which is interference with the gasoline flow caused by bubbles in the pipeline when the gasoline gets too hot.

7. c. A diesel engine does not employ a carburetor. Instead it uses a fuel injection system.

8. c. Electric motors when running give off ozone, a form of oxygen, in large amounts. Ozone causes rapid ageing of rubber.

9. a. Alcohol boils at 180 deg. against a boiling point of 212 deg. for water. As a result, the alcohol will evaporate before the water, making replacement necessary. Anti-freezes with a boiling point higher than that of water do not need replacing.

10. b. Chains should never be used on the front wheels as they seriously hamper steering.

Signs of the Times

Road Mechanic: "Waiter, bring me a glass of tomato juice for a pickup."

Waiter: "Yes, sir, and what'll you have for yourself?"



Heavy tire testing units like this one are racing across the Arizona deserts, deliberately raising hell with U. S. Rubber Co. tires. It is part of a gigantic testing program that involves about 100 million tire miles per year

Triple-Action* Wash!

for

TRUCKS • TRAILERS • R.R. COACHES
TROLLEYS • BUSSES • AUTOS • BOATS



Saves time—cuts labor cost

*** SCRUBS . . .**
SOAKS . . .
RINSES . . .
IN ONE MOTION!

FOUNTAIN BRUSHES



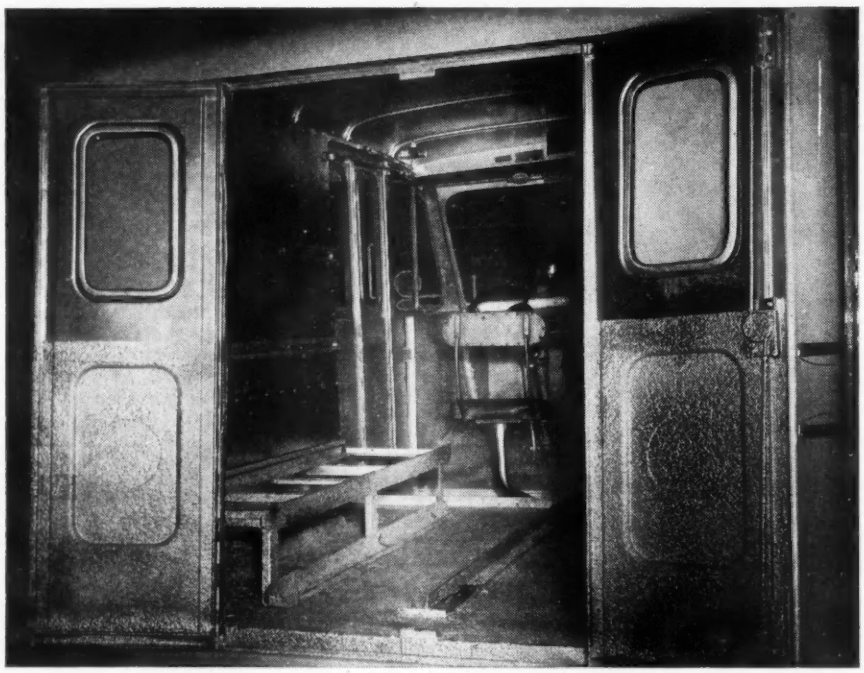
- **Cleans surfaces and crevices thoroughly**
- **Standard ¾ hose connection**
- **Water control valve-push type**
- **Brush replaceable at low cost**
- **Quality brushes in horsehair, nylon or bristle**

Write today for prices and dealer nearest you.

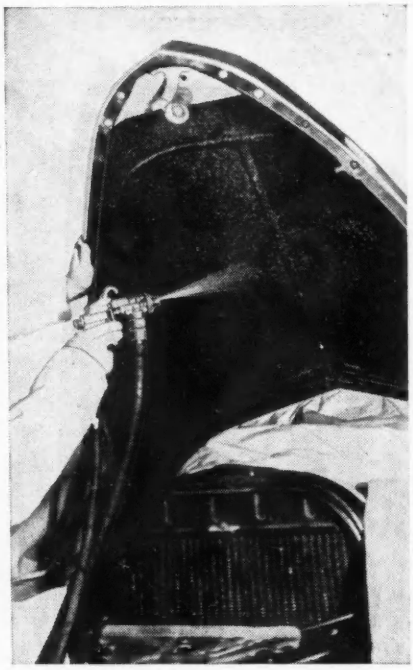
A. LAITNER & SONS

2000 Brooklyn Ave. Detroit 26, Mich.

Brush Manufacturers Since 1855



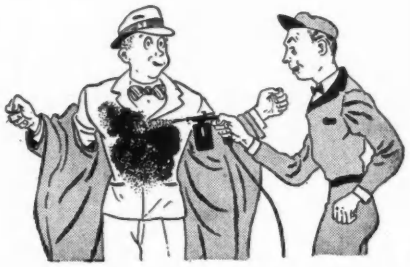
Used on floor and lower side walls of dairy truck, undercoater protects body from both moisture and acids



Sprayed on underside of hood, undercoater materially reduces engine noise. It may also be used on valve cover

Protective Undercoaters

Seal Out Rust, Deadens Noise . . . Impervious to salt,





by BART RAWSON

Associate Editor
Commercial Car Journal

PROTECTIVE UNDERCOATINGS for highway vehicles are not exactly new, but like many products developed just prior to the war, they faded into relative obscurity during it. From here on out, however, it is our guess that you will be hearing a lot more about them.

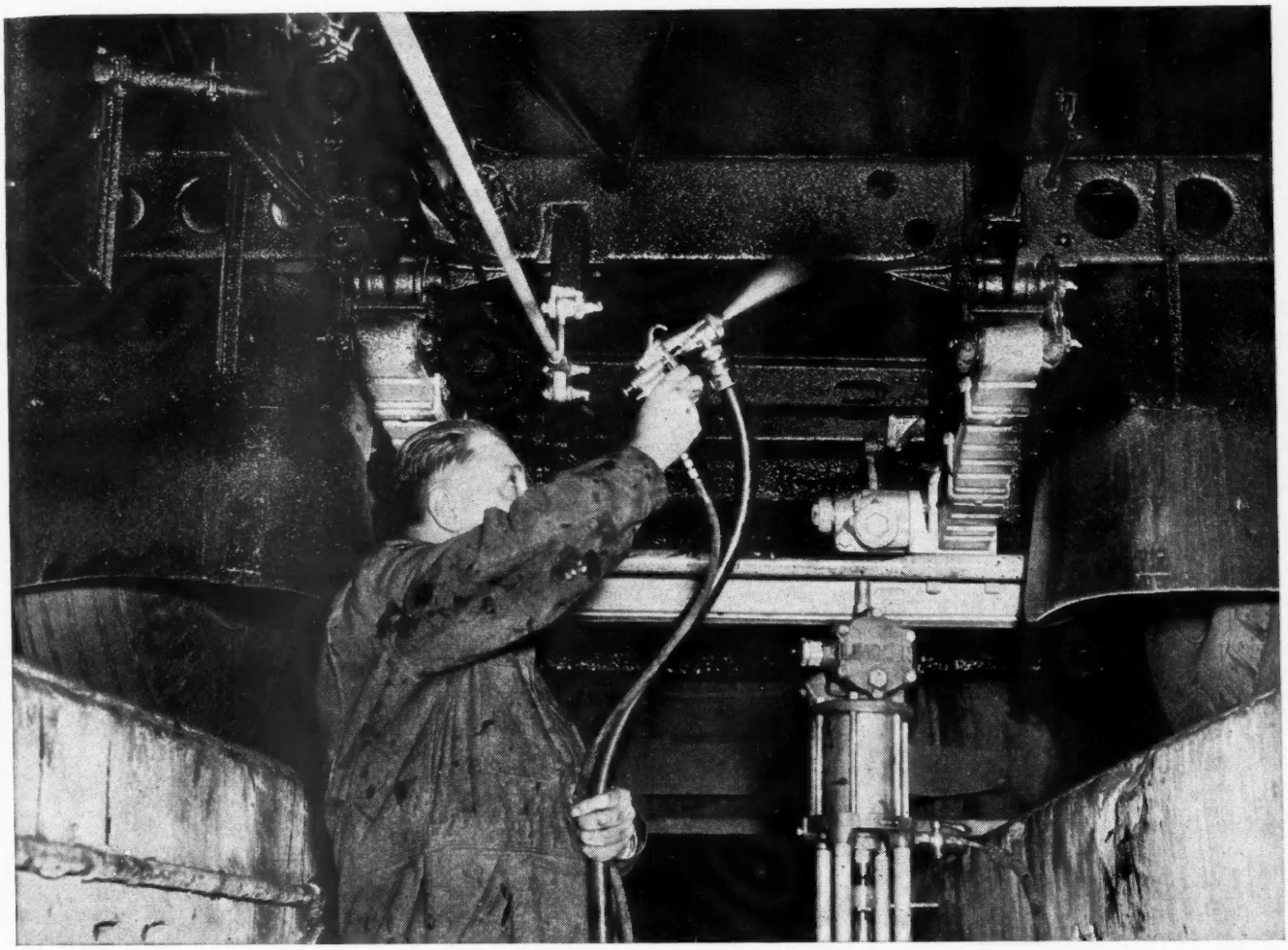
This assumption is based upon the simple truth that by protecting surfaces from rust and the abrasive action of flying debris, the product can save the fleetman money. In addition, the undercoater helps to deaden noise, increases driver comfort and even safety, and comes in for a number of interesting specialized uses. One such use is in the case of stop-and-start delivery vehicles where, as an insulating coating, it may be applied to engine pans to bring up sub-normal crankcase temperatures. But before becoming too involved in such details, let us pause for a look at the products themselves.

Physical Characteristics

UNDERCOATERS are supplied in the form of a thick compound which is sprayed on to a depth of approximately 1/8 in. and dries firm but never sets hard. In this feature lies the secret of its sealing characteristics and especially its ability to withstand abrasion. Despite the resilience of the product, when dry it is not tacky. Hence it does not tend to pick up any more dirt than untreated surfaces and may be washed freely with hot water and the usual detergents, although steam should be avoided.

Rubber, Asphalt and Tar Bases

OFFERED by several manufacturers, the products fall into three categories. Those with a rubber base, those with an asphalt base, and those with a tar pitch base—having no flow point at any temperature.



Principal use of undercoater is protection for underbody surfaces. Here the product is being sprayed on light trailer. Average thickness is about ⅛ in.

All photos courtesy Undercoat Division, Minnesota Mining & Mfg. Co.

moisture and acids, they also may be used to bring up crankcase temperatures

It is not the purpose of this article to weigh the advantages and disadvantages of one type of undercoater as against the other. Suffice it to say that operators should consider carefully the claims made by reputable manufacturers of the several products and to be especially certain that the undercoating material is specifically designed for heavy-duty work. Automotive engineers look for the following properties, and fleet operators cannot go wrong if they do likewise.

1. Adhesion. 2. Resistance to abrasion. 3. Elasticity. 4. Decibel rating on sound deadening that is impressive. 5. Ability to form nonporous film thus preventing moisture traps. 6. Resistance to fire.

Economical In Use

COST of the material itself averages between $1 and $1.50 per gal., and each gallon covers approximately 7½ sq. ft. It takes about 8 gal. to undercoat the average passenger car; about 30 gals. for a 30 ft. trailer. That puts the material cost per application at about $12.50 for the passenger car and about $37.50 for the big trailer. Truck chassis applications would vary widely within these limits depending upon size and construction characteristics.

Normally one application lasts the life of a passenger car; at the most two will last the life of a truck.

To the cost of the material must be added labor time, which runs from 1 to 3 hours including masking time but not including cleaning time, and the cost of the spraying equipment. Either a heavy-duty pressure tank with bottom outlet or an air motor barrel pump will do the job in conjunction with necessary flexible lines and a standard production-type spray gun fitted with a special orifice approximately ¼ in. in diameter. The complete tank type rig costs about $125; the pump type between $225 and $260.

Little Added Weight

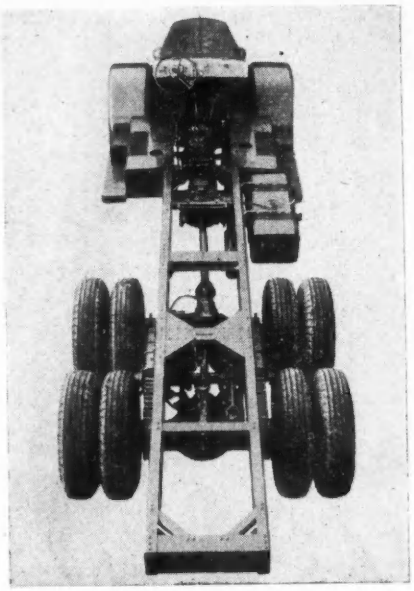
UNDERCOATERS weigh approximately 5 lb. per gal. dry, which nets about 40 lb. for the passenger

(TURN TO PAGE 130, PLEASE)

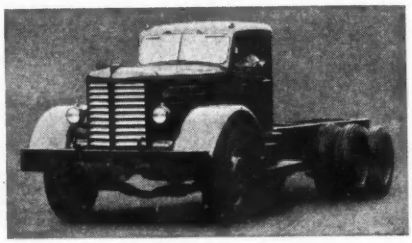
Federal's '47 Line

Features Four New Models

Three six-wheelers, 40,000 and 55,000 lb., g.v.w., and a 30,000-lb. four-wheeler, fill out 17 model line



Model 664MAB, with typical Federal six-wheeler chassis



One of the 17 Federal models now in production

THREE tandem axle, six-wheel trucks designed for heavy-duty hauling service have been added to the Federal Motor Truck Co., line of commercial vehicles. At the same time, Federal recently announced the Model 65MA, a four-wheel model of 30,000 lb. g.v.w. capacity, similar in specifications to the 65M2 now in production. Major difference between the two four-wheelers is that the 65MA is equipped with a Timken double-reduction axle and auxiliary transmission instead of the two-speed axle used on the 65M2. The four new models combine to give Federal a line of 17 distinct models in current production.

Data on Six-Wheelers

THE six-wheelers consist of the Model 663MA of 40,000 lb. g.v.w. for high speed, heavy-duty highway operation with a road speed in direct of 50 m.p.h. and 59 m.p.h. in overdrive; the 664MAB of 55,000 lb. g.v.w. for heavy duty on and off-the-highway work; and the 664MA of 55,000 lb. g.v.w. for off-the-highway operations primarily. The latter two models are mounted on the same chassis.

Coming to the specifications of the six-wheelers, all three models use the Continental R6602 overhead valve engine; six-cylinders, 4⅞ in. bore x 5⅜ in. stroke, 602 cu. in. displacement, rated 200 hp. at 2600 r.p.m. and developing 464 lb./ft. torque at 1250 r.p.m., compression ratio 6.16 to 1. This engine is provided with full equipment such as torsional vibration dampener, dual oil filters, oil bath air cleaner, Thompson Roto-Valves, etc. Federal, however, specifies an updraft carburetor, supplies the Donaldson valve crankcase ventilating system with an air cleaner for the oil filler intake. Crankshaft has seven main bearings of 3¼-in. diameter and is made with 12 counterweights. Pistons are of heavy-duty aluminum alloy with five rings.

At the owner's option the engine can be converted to burn butane gas, using either Ensign or American Liquid Gas equipment.

Electrical System

THESE jobs are provided with a 12-volt electrical system, using two six-volt batteries to simplify the replacement problem. A heavy-duty oil-filled and water-proof bus-type coil is employed. The wiring harness is arranged for operation with a multiple fuse block. Other under-hood features include: Automatic hood light, gasoline filter, and solenoid-type starting switch. An engine tachometer is standard equipment on the instrument panel and is graduated to indicate a safe operating range up to 2500 r.p.m. The engine carries a built-in mechanical governor set to cut off at 2500 r.p.m.

A pressure cooling system is employed and an automatically operating winter front can be supplied when specified. Cooling system includes a six-blade 22 in. fan driven by double V-belts and operates in a full shroud.

The new power train is said to provide the latest equipment known to the art. The 663MA has a Fuller 5A65 five-speed transmission while the two heavier models use the Spicer 7741 four-speed transmission. All three models have the Spicer 703F three-speed auxiliary transmission. The clutch supplied by Lipe-Rollway is a 15-in. single plate unit, easy to operate and fully adjustable.

Timken tandem worm drive rear axles of latest type are used on the 663MA and 664MAB, these being Timken SW-3012 and SW-456 respectively. The 664MA is equipped with a Timken SD-462 tandem double-reduction axle. On the high-speed 663MA job, the operator can specify the Timken aluminum tandem rear axle, which—through the use of light weight aluminum for the housing, brake parts, and hubs—aids materially in reducing dead weight. Timken front axles are used throughout.

Rear-end construction of the six-wheelers is such as to assure correct

(TURN TO PAGE 90, PLEASE)



Columbia Baking Co., Atlanta, operates a number of Lindsay bodies in its fleet. The LS Bodies illustrated were built by Murphy Body Works, Wilson, N. C.

Do you have 7 GOOD REASONS when you Order Your Truck Bodies?

The Lindsay Body Gives You These Values . . .

1. **EASE OF REPAIR.** A Lindsay body can be repaired quickly—damaged panels easily removed—replacements available from warehouse stocks.
2. **NATION-WIDE SERVICE.** There are 207 authorized Lindsay Body Builders, thus, you can get complete factory service on any Lindsay body any place in the country. Your branch offices can also buy new bodies locally and know that they conform to your standard specifications.
3. **SPEED OF DELIVERY.** Lindsay bodies—one or a hundred—are built in record time. This modern method of assembly is ideal for line production.
4. **STRENGTH AND SAFETY.** LS has an amazingly high strength-weight ratio. Your Lindsay body withstands wear—saves weight—increases payload.
5. **APPEARANCE.** The rugged beauty of LS is adaptable to your individual design requirements.
6. **UNIFORMITY.** Units in your fleet can be identical yet built in entirely different parts of the country.
7. **EXPERIENCE.** Lindsay bodies stand the test of actual service. The strongest and most frequently heard reason given for the purchase of Lindsay bodies last year was—"We've used them before." Let us tell you all about Lindsay bodies.



"Jim," a neighbor of yours, was chosen an LS Body Builder because of his ability to handle your requirements intelligently—whether you need one or a thousand truck bodies.

Your "Jim" can design a body to meet your exact requirements—make speedy deliveries and a quick factory repair job.

LINDSAY LS STRUCTURE

The Lindsay Corporation, 1724 25th Ave., Melrose Park, Ill. Sales Offices: Chicago, New York, Atlanta, San Francisco, Montreal.

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending

DISTRIBUTORS AND BUILDERS IN ALL PARTS OF THE COUNTRY

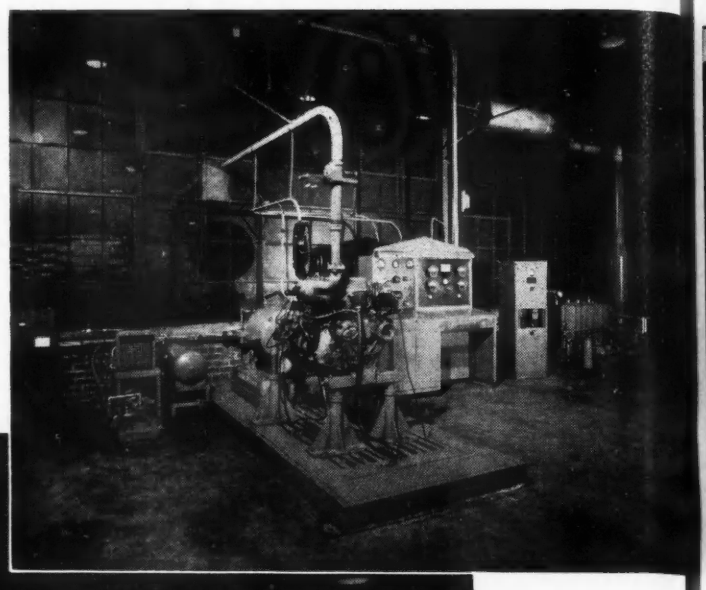


Fig. 1, Right: Engine dynamometer is very complete, doubles as break-in stand. Note external cooling system and oil refiner at left, electrical and exhaust analyzers at right

Fig. 2, Below: Tractor and trailer rebuilding lines occupy main part of Charlotte depot. Engine, clutch, transmission and rear end sections plus huge machine shop are in "L" at rear



Associated Sets Up Specialty

ASSOCIATED'S really heavy maintenance—the rebuilding of major component units and complete tractors—is handled by shops at Charlotte, N. C., and Springfield, Mass. They are supplemented for flexibility of operations by small unit rebuilding shops (for carburetors, electrical equipment, etc.) at Baltimore and Burlington, (N. C.) in the south and at Buffalo in the north. In addition, there are specialized shops for painting and trailer repairs.

The economic reasons for concentrating major unit rebuilding in one or as few shops as possible are manifold. Paramount is the matter of personnel. Men can be trained under departmental supervision to specialize on certain components and assemblies, and reach an efficiency and skill not otherwise obtainable. The limited scope of operation makes it possible for personnel to keep abreast of modifications by the manufacturer and to establish positive go-no-go wear limits without resorting to experiments.

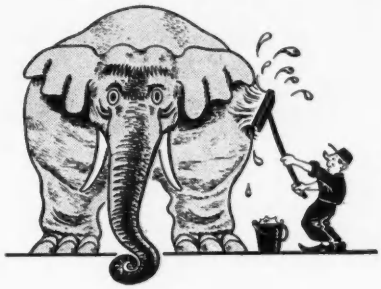
Concentration of shops obviously reduces the procurement of expensive precision instruments and tools to the minimum. Moreover, it cuts down parts and supply inventories, and permits streamlined requisitions based on the demands of only two shops. At the same time, reclamation of serviceable parts also becomes more effectual.

Unit Overhauling

THE two big overhaul shops operate on a virtual production line basis for the overhauling of engines,



Fig. 3, Shop-built stand for rear-end assembly, plus overhead crane typifies completness of each section



Shops for Heavy Maintenance

Two shops geared for assembly-line rebuilding of tractors, trailers and heavy components. Others specialize on fuel and electrical unit rebuilding

by D. V. GEARWAR

General Superintendent of Maintenance, Associated Transport, Inc.

transmissions, clutches, rear ends, steering assemblies and all minor components as well. There are no actual conveyor lines as yet, but engines, particularly, are handled on a step-by-step basis being conveyed from one station to the next by overhead cranes.

The actual operations follow standard procedures and need no special comment. An idea of the completeness of these shops, however, can be gained from the following partial list of major equipment items: Engine dynamometer, chassis dynamometer, piston grinder, line reamer, crankshaft grinder, miller, shaper, preheating furnace (for heads and other major units, prior to welding), electric and gas welders, metalizer, hydraulic presses, drill presses, steam cleaners, agitated dip tanks, etc.

The dynamometer, shown at Fig. 1, is unusually complete in that—in addition to full temperature, electrical and exhaust gas gages—it has a built-in oil refiner with magnetic as well as gauze filters. There is also a special external cooling system for the engine under test, with 10-gal. water storage tank.

Each engine after overhaul is run in under load for from three to five hours. A special form, Fig. 4, also illustrated, is used for completely tabulating all readings during the test.

There is absolutely no need for heavy lifting in these shops. Typical is the arrangement for differential overhaul. A small overhead crane does all the lifting of internal parts as they are removed and replaced. Machine shop facilities, particularly in recent years, have been called upon to handle some mighty intricate rebuilding tasks that normally would be a simple matter of replacement.

(TURN TO PAGE 114, PLEASE)

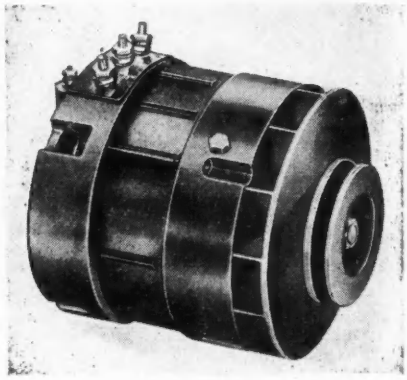


D. V. Gearwar

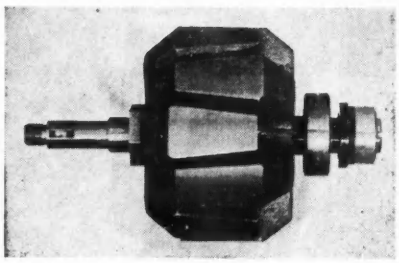
Unusual Generator

Delivers High Amperage at Idle

Light-weight a.c.-d.c. system keeps battery up with radio and other high-load accessories



Complete Leece-Neville Alternator



Rotor assembly has no commutator

A NEW a.c. generating system for automotive use featuring lightweight and unusually high output at low engine r.p.m. has been developed by the Leece-Neville Co. Originally developed as a dependable power supply for police cars and other vehicles equipped with two-way radio, the sys- should find many applications on trucks equipped with extra electrical equipment of any kind including radios and the newly-developed electrically-heated windshields.

Available in either 6 or 12-volt models, the Leece-Neville system includes a rather revolutionary alternator, a copper-sulphide rectifier which converts the a.c. current to d.c. and a voltage and current regulator wherein the conventional cutout relay is replaced by a load relay.

35 Amp. at Normal Idling

THE 6-volt system will develop 35 amp. at normal idling speeds and 60 amp. at all engine speeds above 400 r.p.m. It weighs 40 lb. including all three components.

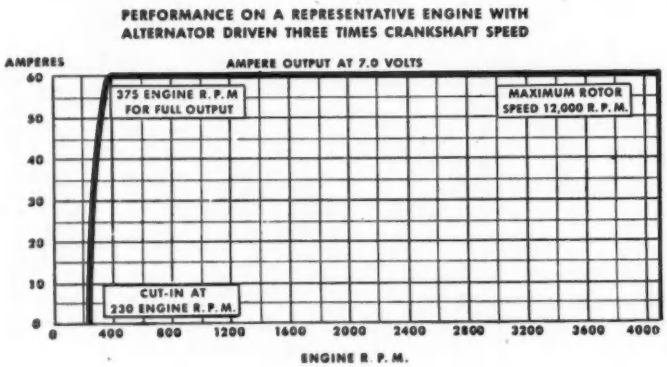
The 12-volt system develops 100 amp. throughout its entire speed range and weighs only 42 lb., nearly 60 per cent less than conventional d.c. equipment.

Principal secret of the high output at low engine speed is the alternator's ability to withstand speeds up to 12,-000 r.p.m. without damage, thus permitting the unusually high speed ratio between engine and alternator of approximately 3 to 1.

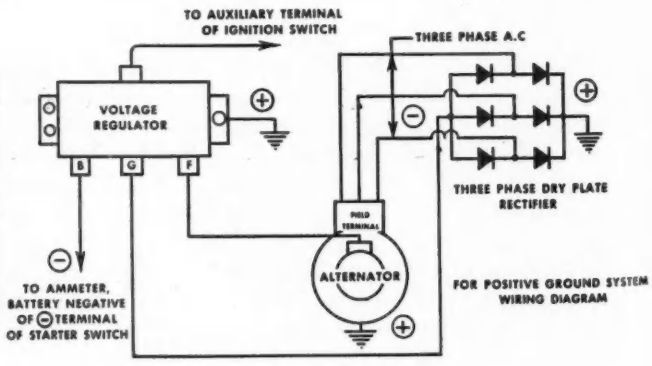
The alternator is of the revolving field type so that the conductors in which the output current and voltage are generated are stationary. The stator winding is three-phase. The field coil wound in the shape of a doughnut, is held rigidly in position in the rotor and is energized from the battery through one brush riding on a small slip ring and another brush which contacts the end of the shaft.

Since this brush arrangement dispenses with the need for a conventional commutator, the principal cause of burn-out is eliminated. Because the polarity of the field makes no difference in the operation of the alternator, neither does the direction of rotation, making it adoptable for either clockwise or counterclock-wise rotation. Also the system may be used with either positive or negative ground merely by reversing the d.c. connections to the rectifier.

Chart shows output characteristics of 6-volt system. 12-volt model develops 100 amp. above 375 engine r.p.m.



Wiring diagram for positive ground. When negative is grounded, reverse two d.c. connections at rectifier





You chalk up savings that mount up fast if a Studebaker truck does your hauling

MEN who speak with authority on commercial transportation put Studebaker trucks at the top for consistent operating economy.

They are rugged, brilliant-performing trucks—designed and built to a strict more-mileage formula.

They're thoroughly modern, exceptionally comfortable trucks, too—and they come off the production lines with the most advanced operating features, ready for immediate service unless a special body is desired.

Tested for stand-up stamina

The hard-headed realists of Studebaker's truck engineering corps think like truck operators when they're designing a model.

They picture that model, not in its showroom gloss, but heavily loaded in hard going. So they make every specification make good in their scientific laboratories. Then they put it through thousands of miles of hard driving on the Studebaker 800-acre, million-dollar proving ground.

This care saves upkeep dollars

These pre-sale precautions that Studebaker takes save you many a dollar on gasoline, tires and repairs. They amount to performance insurance for which you pay no premium.

The Studebaker line includes the one-ton-model pictured above, the half-ton Coupe Express pick-up and the heavy-duty-model Studebaker in any one of several wheelbases.

They're built to the same quality standards that distinguished over 200,000 heavy-duty Studebaker military trucks and light-weight Weasel troop and cargo carriers in war. So, even if you have to wait a little, get a new Studebaker truck.

STUDEBAKER

Builder of trucks you can trust

The Studebaker Corporation, South Bend 27, Indiana, U.S.A.



Proud achievement of conscientious master craftsmen! This heavy-duty-model Studebaker, like all other Studebaker trucks, comes to you solid and sound with America's finest automotive craftsmanship. Studebaker's smooth Hy-Mileage engine powers this broad-shouldered model. Studebaker's sturdy Econ-o-miser engine of wartime Weasel fame powers the versatile Studebaker half-tons and one-tons.

New Truck Registrations by Makes and States*

		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Hud-son	Inter-nat-ional	Mack	Ply-mouth	Reo	Ster-ling	Stude-baker	White	Willys	All Others	Total
Alabama	December	1	.....	1078	14	1	322	18	657	.....	160	6	309	1	.....	56	.....	54	22	152	3	2,854
	12 Mos.	20	2	4988	72	29	2190	103	3606	.....	547	39	2162	99	1	358	.....	373	178	871	67	15,705
Arizona	December	.....	.....	136	3	.....	44	3	80	2	34	.....	31	.....	.....	10	.....	20	10	24	3	400
	12 Mos.	7	.....	1031	9	13	447	21	815	3	106	9	352	16	.....	72	.....	134	51	305	33	3,424
Arkansas	December	.....	.....	249	1	1	78	4	213	.....	31	.....	49	.....	.....	5	.....	20	5	17	.....	673
	12 Mos.	2	.....	3416	36	1	1334	34	3427	.....	375	11	1203	24	.....	52	.....	216	48	416	3	10,598
California	December	50	1	1835	34	53	599	24	1049	5	386	14	469	.....	1	57	2	327	49	297	47	5,299
	12 Mos.	417	45	10206	205	299	6407	179	8029	49	2202	229	4356	122	2	507	114	2441	558	4528	542	41,437
Colorado	December	.....	.....	188	5	3	30	.....	93	1	30	.....	46	.....	.....	9	.....	25	4	28	.....	482
	12 Mos.	28	.....	1631	50	39	778	18	1348	32	216	10	692	7	.....	67	.....	180	63	250	3	6,502
Connecticut	December	29	20	155	13	1	70	16	94	.....	68	8	80	4	.....	20	3	20	15	41	.....	655
	12 Mos.	193	96	1482	62	70	916	96	928	12	242	38	768	67	.....	109	18	244	166	551	31	6,089
Delaware	December	3	.....	41	.....	.....	26	.....	33	.....	20	2	16	1	.....	.....	.....	12	.....	3	.....	157
	12 Mos.	41	7	472	9	16	282	1	347	.....	100	9	209	9	.....	20	.....	103	27	87	7	1,748
Dist of Col.	December	2	.....	101	2	2	30	4	48	.....	18	.....	28	1	.....	10	.....	9	4	18	.....	277
	12 Mos.	19	28	533	17	71	303	13	419	.....	107	10	278	10	1	108	.....	67	58	131	7	2,180
Florida	December	16	.....	375	10	1	160	11	380	1	82	4	134	1	.....	28	.....	58	12	92	3	1,348
	12 Mos.	110	6	3342	70	27	2032	86	3723	9	551	37	1363	241	1	219	.....	463	157	948	29	13,412
Georgia	December	2	.....	333	4	.....	81	1	174	.....	25	4	73	3	1	12	.....	19	12	28	1	773
	12 Mos.	11	.....	4025	57	16	1935	52	3828	.....	398	31	1458	109	4	213	.....	462	210	601	38	13,446
Idaho	December	.....	.....	108	1	.....	42	2	80	.....	31	2	45	.....	.....	4	.....	22	3	13	1	354
	12 Mos.	6	.....	1099	26	8	519	33	799	.....	158	10	479	8	.....	54	.....	217	13	173	41	3,643
Illinois	December	7	.....	760	43	27	350	7	461	.....	116	12	253	3	.....	28	.....	77	34	183	10	2,371
	12 Mos.	144	18	7996	488	314	5264	170	5779	9	1269	185	4912	173	.....	645	6	1346	508	1974	193	31,393
Indiana	December	4	5	449	22	11	198	8	278	.....	66	4	187	2	.....	33	.....	115	56	79	14	1,531
	12 Mos.	21	139	4140	160	112	2601	108	2819	1	647	90	2584	23	.....	345	.....	1288	291	1117	48	16,534
Iowa	December	.....	.....	612	20	1	184	6	343	.....	82	6	245	9	.....	35	.....	78	24	67	3	1,715
	12 Mos.	8	3	4440	163	33	1929	87	2743	3	456	58	2199	77	.....	300	.....	578	97	871	15	14,058
Kansas	December	.....	.....	527	8	2	95	6	220	.....	48	.....	91	.....	.....	14	.....	58	13	28	1	1,111
	12 Mos.	6	.....	4413	111	16	1352	63	2461	5	397	32	1784	21	.....	144	.....	514	109	683	43	12,154
Kentucky	December	1	.....	552	13	1	196	7	281	.....	113	4	169	6	.....	38	.....	78	13	113	1	1,586
	12 Mos.	7	2	3709	84	25	1681	67	2405	2	479	31	1683	24	.....	254	.....	349	97	826	4	11,729
Louisiana	December	3	.....	86	5	.....	29	2	63	.....	13	1	33	.....	.....	8	.....	13	9	4	.....	269
	12 Mos.	28	.....	2698	67	11	1294	44	2398	3	241	15	1160	51	.....	125	.....	353	103	542	10	9,143
Maine	December	.....	.....	81	.....	.....	28	1	63	.....	8	3	39	.....	.....	1	.....	8	2	20	3	257
	12 Mos.	12	14	1424	.....	28	753	33	1025	6	191	21	628	37	.....	32	10	175	24	311	53	4,773
Maryland	December	7	6	388	8	12	107	8	142	.....	74	2	93	4	.....	27	4	39	20	40	5	986
	12 Mos.	106	88	2613	40	98	1247	82	1339	.....	456	29	1059	66	.....	225	6	274	179	609	38	8,554
Massachusetts	December	34	16	393	19	11	165	7	337	2	100	5	124	2	.....	28	5	50	29	41	5	1,373
	12 Mos.	460	230	3449	124	311	2361	101	2836	19	582	86	1757	189	.....	387	69	566	395	939	74	14,915
Michigan	December	4	8	836	20	51	533	55	632	1	252	15	232	6	.....	121	.....	119	18	125	13	3,041
	12 Mos.	63	81	5192	127	309	4470	387	5248	8	1258	242	2196	49	.....	659	4	860	207	2777	66	24,203
Minnesota	December	5	.....	494	19	9	282	12	351	2	56	4	175	9	.....	19	.....	70	27	48	2	1,584
	12 Mos.	38	2	3532	117	67	7179	94	3113	27	489	49	2067	93	.....	155	1	523	176	669	62	13,453
Mississippi	December	.....	.....	439	7	.....	160	6	316	.....	71	2	94	.....	.....	12	.....	53	13	34	.....	1,207
	12 Mos.	3	.....	4218	70	5	1676	52	3317	.....	445	11	1367	55	3	127	.....	309	111	512	16	12,297
Missouri	December	5	.....	1005	12	.....	276	9	454	.....	137	6	183	2	.....	28	.....	76	25	97	.....	2,315
	12 Mos.	12	1	7537	158	131	3333	124	4623	.....	795	56	2544	28	.....	233	.....	710	203	1227	111	21,826
Montana	December	2	.....	259	5	.....	39	1	80	1	22	.....	36	.....	.....	2	.....	20	2	27	.....	496
	12 Mos.	12	.....	1506	38	1	638	5	763	4	160	9	637	3	1	22	1	249	31	286	48	4,414
Nebraska	December	.....	.....	367	11	3	67	5	134	.....	40	2	84	7	.....	12	.....	28	21	43	1	825
	12 Mos.	2	1	2496	122	17	1084	48	1638	31	279	18	1378	42	.....	94	.....	298	162	555	18	8,283
Nevada	December	.....	.....	29	.....	.....	8	1	28	.....	1	.....	11	.....	.....	.....	.....	6	.....	2	2	88
	12 Mos.	4	1	244	5	4	223	8	253	1	56	3	140	4	.....	3	5	68	5	89	20	1,136
New Hampshire	December	1	1	78	2	1	29	2	37	1	15	1	20	2	.....	13	.....	5	4	15	.....	227
	12 Mos.	11	7	562	6	10	298	12	372	2	72	6	225	19	.....	54	.....	33	16	131	2	1,838
New Jersey	December	73	75	769	42	17	303	31	514	3	273	20	291	9	.....	43	1	105	64	157	22	2,812
	12 Mos.	438	465	3969	162	187	2415	212	3426	10	970	118	2117	305	3	219	10	647	434	1447	112	17,666
New Mexico	December	.....	.....	190	4	1	55	4	95	1	18	.....	45	2	.....	6	.....	22	5	12	3	463
	12 Mos.	3	.....	1118	31	3	518	21	609	5	162	3	354	23	.....	28	.....	107	39	76	13	3,113
New York	December	290	93	964	72	13	687	37	732	14	243	17	446	91	1	68	4	153	204	217	52	4,398
	12 Mos.	1137	1545	9299	689	327	7202	506	7518	105	2321	190	4580	1249	4	729	86	1545	1245	3045	514	43,836
North Carolina	December	16	1	859	8	4	325	15	720	.....	101	5	248	15	1	64	.....	147	43	157	16	2,745
	12 Mos.	117	6	4639	56	32	2183	111	3627	.....	313	44	1527	176	1	304	.....	699	218	983	161	15,196
North Dakota	December	.....	.....	120	2	1	35	1	105	1	14	.....	45	.....	.....	5	.....	13	.....	26	.....	368
	12 Mos.	.....	.....	930	25	7	575	9	857	10	89	7	777	8	.....	46	.....	187	17	277	2	3,823
Ohio	December	20	9	999	41	31	523	36	610	.....	212	10	381	15	.....	75	.....	160	51	170	9	3,382
	12 Mos.	197	73	7649	320	328	5616	382	5572	33	1290	189	4708	196	.....	749	1	1634	981	2506	157	32,581
Oklahoma	December	2	.....	728	4	.....	234	7	459	2	111	3	187	.....	.....	24	.....	87	27	60	2	1,937
	12 Mos.	14	.....	4316	28	49	2092	45	3277	20	430	27	1677	24	.....	167	.....	395	144	624	17	13,346
Oregon	December	1	.....	189	9	2	69	2	100	.....	68	2	69	.....	.....	5	1	27	8	36	.....	588
	12 Mos.	12	1	1905	120	34	1191	85	1508	9	383	32	930	56	.....	104	17	396	115	508	81	7,485
Pennsylvania	December	57	77	1244	55	5	792	49	783	.....	419	22	533	27	1	133	8	202	104	252	31	4,794
	12 Mos.	610	693	8630	376	141	6883	393	6132	6	1779	181	5250	443	1	936	104	1808	940	2503	205	38,014
Rhode Island	December	11	1	89	3	5	33	1	33	.....	10	.....	33	.....	.....	4	.....	7	10	21	.....	251
	12 Mos.	155	8	735	24	67	431	6	411	1	74	13	317	13	.....	17	11	82	43	188	10	2,606
South Carolina	December	2	.....	459	5	2	139	5	250	.....	55	3	83	.....	.....	28	.....	37	17	55	3	1,143
	12 Mos.	14	1	2793	23	12	1240	29	1950	4	262	24	712	49	1	197	.....	422	118	514	40	8,405
South Dakota	December	.....	.....	196	13	2	66	2	97	1	22	.....	98	2	.....	12	.....	27	10	52	.....	600
	12 Mos.	4	.....	855	56	11	569	5	821	23	136	6	678	17	1	58	.....	126	20	265	5	3,456
Tennessee	December	.....	.....	434	10	1	123	10	203	3	83	.....	106	1	.....	15	.....	42	13	89	.....	1,133
	12 Mos.	4	16	5073	55	34	2380	156	3547	4	858	30	1873	80	2	178	2	503	217	734	57	15,603
Texas	December	.....	.....	1256	20	2	441	8	954	.....	222	11	351	7	.....	33	.....	154	73	83	9	3,624
	12 Mos.	5	5	12426	190	67	6164	131	10971	4	1519	103	4855	133	1	384	.....	1405	711	2116	85	41,275
Utah	December	.....	.....	117	3	1	38	1	49	.....	21	1	26	.....	.....	.....	.....	9	.....	3	2	271
	12 Mos.	1	.....	900	24	19	373	27	561	10	154	9	378	12	.....	6	2	137	18	120	20	2,680
Vermont	December	1	1	52	1	.....	23	4	44	.....	19	.....	21	.....	.....	3	.....	13	4	.....	4	190
	12 Mos.	8	20	563	12	5	409	25	531	2	88	6	331	20	1	57	.....	71	15	304	14	2,482
Virginia	December	17	7	799	14	8	240	9	520	.....	88	5	196	7	.....	30	.....	88	25	127	2	2,182
	12 Mos.	175	49	4859	68	70	1860	77	3379	4	455	42	1568	78	.....	175	1	394	188	923	61	14,224
Washington	December	2	.....	485	14	12	216	10	392	5	113	11	170	2	.....	25	3	99	10	44	15	1,628
	12 Mos.	11	.....	2480	82	71	1426	38	2014	9	357	51	1213	67	.....	126	20	603	72	434	74	9,148
West Virginia	December	2	2	181	6	4	94	5	133	.....	62	4	61	.....	.....	14	.....	25	8	36	2	639
	12 Mos.	29	25	1661	58	45	1147	81	1436	15	345	22	678	41	.....	147	1	213	131	529	35	6,639
Wisconsin	December	2	2	614	23	10	242	12	348	5	84	11	180	3	.....	43	2	72	28	115	9	1,805
	12 Mos.	29	5	4028	169	141	1980	88	2620	78	533	72	1907	29	.....	270	21	498	184	885	73	13,610
Wyoming	December	.....	.....	114	4	.....	37	.....	52	.....	9	.....	36	.....	.....	1	.....	16	1	14	2	286
	12 Mos.	1	.....	696	32	5	310	9	501	7	55	2	324	2	.....	29	.....	96	26	179	12	2,286
Total	December	672	325	22812	654	312	8943	475	14294	51	4346	230	6955	244	5	1261	33	2984	1151	3405	301	69,453
	12 Mos.	4755	3683	171619	5093	3734	96490	4557	131469	585	25645	2543	78392	4687	28	10489	510	25360	10117	42135	3359	625,249

* Data from R. L. Polk & Co.

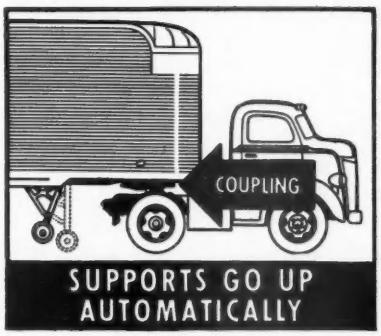
FRUEHAUF "Automatics"

Lower Hauling Costs

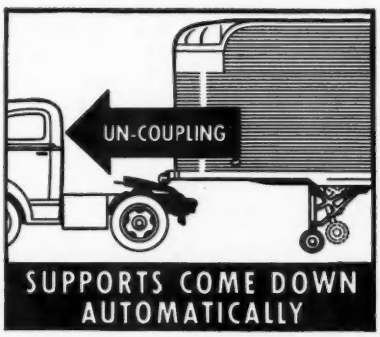


Only Fruehauf Builds Stainless Steel Vans with Revolutionary Torsion-Bar Springing!

SIMPLIFY COUPLING AND UNCOUPLING — SPEED DELIVERIES — PERMIT TRAILERS TO WORK AT PEAK EFFICIENCY!

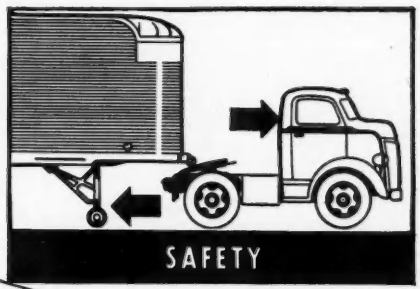


SUPPORTS GO UP AUTOMATICALLY



SUPPORTS COME DOWN AUTOMATICALLY

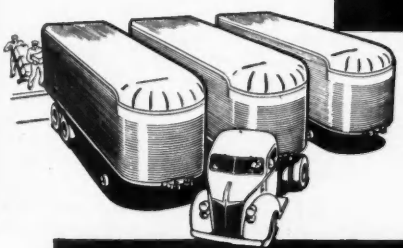
Eliminate the human element entirely. You cannot drive your truck away without the Fruehauf Automatic-Supports coming down and locking in position. As the truck backs under the Trailer, Supports go up automatically.



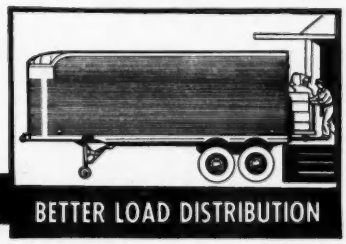
SAFETY



No other "Automatic" has all these features. Fewer working parts . . . wide V-guide on upper 5th Wheel to permit coupling at wide angles . . . working parts protected from dirt . . . roller-bearing wheels . . . inbuilt safety factors.



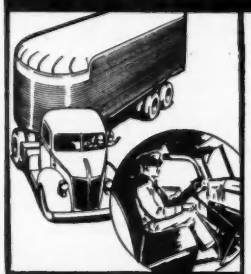
LESS DOCKING SPACE



BETTER LOAD DISTRIBUTION

● These "eye-witness" views show at a glance the important advantages of Fruehauf "Automatic" Trailers. Actual user experiences demonstrate that "Automatics" are the most efficient of all Semi-Trailers. Get the full "Automatics" story!

SEND FOR "AUTOMATIC SAVINGS" FOLDER!



SAVES LABOR

"Automatics" are perfect at crowded loading docks, where there's no room to hand-crank Supports. Driver needs opening only large enough for the Trailer. Also, when Trailers are used in "shuttle" operation (where one truck handles two or more) driver wastes no time in coupling or uncoupling. Trucks work constantly.

Driver has no Supports to crank up and down with an "Automatic" on the job. To uncouple, he simply pulls a lever on the 5th Wheel, or with "Full-Automatics" uses finger-tip levers right in the cab. Coupling is just as easy. Saves labor and driver's time—lowers operating costs tremendously.

On Fruehauf Automatics, Supports have unusual forward Support-travel. In "down" position, Supports lessen the possibility of nose-diving in event of freak shift of load distribution.

World's Largest Builders of Truck-Trailers

FRUEHAUF TRAILER CO. • DETROIT 32

10 Factories — 65 Factory Service Branches

FRUEHAUF TRAILERS

A TRUCK IS LIKE A HORSE — IT CAN PULL MORE THAN IT CAN CARRY

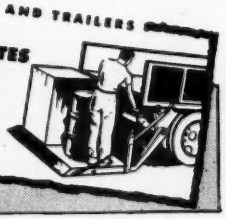
"ENGINEERED TRANSPORTATION"

FOR TRUCKS AND TRAILERS

FRUEHAUF ELEVATING ENDGATES

Lift and Lower Loads Up to 1-TON the Hydraulic Way!

Send for free booklet "FRUEHAUF ELEVATING ENDGATE"



CCJ NEWSCAST



SAE T & M PROGRAM

The program for the SAE National Transportation Meeting to be held at the Stevens Hotel, Chicago, April 16 to 18, is virtually complete and will include the following discussions:

Apr. 16, morning session—Protective Coatings for Increased Life in Bus and Truck Parts: "Electroplating" by L. J. Schustic, duPont Co.; "Metal Treatment" by V. M. Darsey, Parker Rust Proof Co., and "Organic Finishes" by R. B. Davis, duPont Co.

Apr. 16, afternoon session—Elimination of Causes of Frequent Servicing: "Operator's Viewpoint" by T. L. Preble, Tide Water Associated Oil Co., and "Manufacturers' Viewpoint by D. B. Erminger, International Harvester Co.

Apr. 17, morning session: "Fleet Tests of the New Synthetic Lubricants" by D. K. Wilson, New York Power & Light Corp.

Apr. 17, afternoon session: "Problems in Commercial Vehicle Suspensions and Their Elimination by Torsion Bars" by N. E. Bateson, American Aerocoach Co., "Rubber Mounted Torsion Bar" by F. R. Fageol, Twin Coach Co., and "Torsion Bar Suspension on Heavy-Duty Vehicles" by Col. J. M. Colby, Ordnance Dept.

Apr. 17, dinner: "Wartime Experience Pays Transportation Dividends" by Robert L. Biggers, Fargo Motor Corp.

Apr. 18, morning session: "A Practical Approach to Satisfactory Acoustical Design of Automotive Trucks" by Charles Thomas and B. G. Radin, Ford Motor Co.

Apr. 18, afternoon session—Engine Bearings: "Sleeve Bearing Lining Materials—1947" by W. E. Thill, Federal Mogul Corp., and "Automotive Bearings from the Service Viewpoint" by H. W. Leutkemeyer, Cleveland Graphite Bronze Co.

DIESEL SMOKE CORRECTION

Last month in Professor Schweitzer's article, "Must Diesel Engines Smoke" (P. 130), it was stated that if the smoke rise is more pronounced in the idling range, the probable trouble is sluggish combustion. This is the opposite of the truth.

C.C.J. erred in briefing Professor Schweitzer's S. A. E. paper for publication. To set the reader straight, the paragraph should read: "If the smoke rise is more pronounced at the *idling* range, the probable trouble is "cold smoke" because of excessive ignition delay. If the smoke rise is more pronounced in the *heavy load* range, the probable trouble is sluggish combustion."

DATES AND DOINGS

MAR. 25-28—Greater New York Safety Council Convention and Exposition, Hotel Pennsylvania, New York City.

MAR. 28-29 — Wyoming Trucking Assn. State Convention, Townsend Hotel, Casper, Wyoming.

MAR. 31-APR. 4 — Motor Vehicle Fleet Supervisors Training Course, University of Missouri, Columbia, Mo.

APR. 7-11—Fleet Supervisor Training Course, Northwestern University, Evanston, Ill.

APR. 15-19—Fleet Supervisor Training Course, Northwestern University, Boston, Mass.

APR. 16-18—Transportation meeting, Society of Automotive Engineers, Stevens Hotel, Chicago.

APR. 21-25—Fleet Supervisor Training Course, Marshall College, Huntington, W. Va.

APR. 28-MAY 2 — Fleet Supervisor Training Course, Iowa State College, Ames, Iowa.

MAY 12-15—American Trucking Associations, Annual Safety, Operations & Equipment Meeting, Hotel Cosmopolitan, Denver, Col.

MAY 22-24—Associated Motor Carriers, Inc., of S. D., State Convention, Cataract Hotel, Sioux Falls, S. D.

MAY 29-31—Washington Motor Transport Assn. State Convention, Olympic Hotel, Seattle, Wash.

JUNE 1-6—Summer Meeting, Society of Automotive Engineers, French Lick Springs, French Lick, Ind.

AUG. 21-23—West Coast Transportation & Maintenance meeting, Society of Automotive Engineers, Biltmore, Los Angeles, Calif.

OCT. 26-30—American Trucking Associations, Inc., Annual Convention, The Biltmore, Los Angeles, Calif.

JAN. 12-16, 1948—Annual Meeting, Society of Automotive Engineers, Book-Cadillac Hotel, Detroit, Mich.

ATA SPRING MEETING PLANS

The annual Safety, Operations and Equipment Spring Meeting of the American Trucking Associations, Inc., to be held at the Hotel Cosmopolitan, Denver, Col., May 12 to 15 will include discussions of cab characteristics, light weight trailers, refrigerated bodies, brakes, transmissions and diesel maintenance. Advanced programs indicate that the first two days will be devoted largely to operations and safety, with joint meetings of all activities on the third day and equipment and maintenance sessions on the last day.

ATA URGES LABOR LEGISLATION

Testifying before the House Education and Labor Committee last month, Roland Rice, general counsel of the American Trucking Associations, Inc., said: "Punitive legislation is not essential, but clarity and fairness are definitely required for the stability and equity of our society."

Mr. Rice submitted to the Committee a lengthy statement in which he developed these major points:

1. We recommend that secondary boycotts and jurisdictional strikes be outlawed and that peaceful picketing be defined.

2. We believe that labor unions should be suable in court for breach of contract.

3. The Wagner Act should apply equally to both management and labor.

4. Industry-wide bargaining should be eliminated except where management and labor mutually agree.

5. There should be legislation either (1) to abolish the closed shop, the union shop, and maintenance of membership contracts, or, (2) to regulate unions as monopolies in the public interest.

6. We recommend the establishment of an independent federal mediation board, with the right reserved to management and labor voluntarily to mediate disputes through a panel selected and supported by the disputants.

FACTORY DOINGS

International Harvester Co.'s annual report for the year just ended reveals that sales of trucks and truck parts amounted to $173,038,000. Truck division sales accounted for 35.9 per cent of the company's total volume and compared with a 1945 figure (exclusive of war goods) of $87,539,000.

General Motors' GMC Truck & Coach Division is building six master wholesale parts warehouses and fifteen zone parts and accessory warehouses in key cities throughout the country. The first master warehouse at Oakland, Cal., is complete, and the program is expected to greatly expedite distribution of parts.

Fruehauf Trailer Co. has purchased all outstanding stock of Carter Mfg. Co. and of Carter, Inc., Memphis. Carter management remains unchanged and production of Carter trailers will continue as heretofore with service offered at Fruehauf as well as Carter branches.

A weight saving of 650 lb. is claimed for a new refrigerated Fruehauf trailer van

(TURN TO PAGE 80, PLEASE)

Now! HY-POWER TANDEM



More Power for Greater Braking Efficiency

Here is a powerful new HY-POWER vacuum brake designed for trucks hauling extremely heavy loads — trucks with a hydraulic cylinder not less than 1¾ inches in diameter.

This new tandem unit has all the advantages offered by HY-POWER efficiency — plus immense extra power.

Engineered for 3-ton and larger trucks, HY-POWER TANDEM provides tremendous direct applied power at slight pressure on the brake pedal. Ruggedly constructed for long, trouble free service. Ask your Midland distributor, or write to us for complete details.

THE MIDLAND STEEL PRODUCTS CO.
6660 Mt. Elliott Ave. • Detroit 11, Mich.
***Export Dept:* 38 Pearl St., New York, N. Y.**

MIDLAND POWER BRAKES

Newscast

(CONTINUED FROM PAGE 78)

through the use of new "Ultra-Lite" Fiberglas and re-designed floor construction featuring a sub-floor pan of corrugated aluminum in place of steel.

Alemite Division of Stewart-Warner Corp. is promoting a nationwide safety advertising campaign with special emphasis on accidents caused by driver fatigue.

Toledo Steel Products Co. has moved to enlarged quarters at 3300 Summit St., Toledo.

Howard Zink Corp. (seat covers and fabrics), has purchased the Consolite Corp. (mirrors, reflectors, etc.). Both companies have headquarters in Fremont, Ohio.

Awnco Mfg. Co., 747 S. Western Ave., Chicago (rear view mirrors) will henceforth be known as the Interstate Mfg. Corp.

Tinnerman Products Inc., Cleveland, has licensed Shakeproof, Inc. division of Illinois Tool Works, Chicago, to manufacture its Speed Nuts and Speed Clips.

Domestic Truck Factory Sales by Gross Vehicle Weight

	5000 & less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
Year 1946	291,808	78,884	174,741	144,302	19,313	22,501	13,061	744,610
Jan. 1947	25,387	11,049	21,427	11,791	3,259	2,484	1,903	77,300

1946 Truck Trailer Production*

Type of Trailer	December	Twelve Months
Vans		
Insulated	40	1,128
Refrigerated	102	2,256
Furniture	....	1,652
All other closed top	3,037	27,586
Open top	282	2,029
Total Vans	3,461	34,651
Racks		
Cattle Racks	437	4,932
Stake Racks	202	3,251
Total Racks	639	8,183
Tanks		
Petroleum	123	1,799
Other	125	827
Total Tanks	248	2,626
Pole and Logging		
Single Axle	354	5,970
Tandem Axle	149	1,598
Total	503	7,568
Platforms	1,136	11,762
Low-bed haulers (over 15 ton)	147	1,976
Off-highway	87	619
Dump Trailers	46	697
All other Trailers	239	2,537
Total—All Trailers	6,506	70,619
Trailer Chassis	380	5,615
Total—Trailers and Chassis	6,886	76,234

* Industry Division—Bureau of the Census.



HOME TOWN NOTES

Fleetmen operating in the following cities should find these announcements of definite interest:

Austin, Tex.: Tex Building and Equipment Co., Dallas Highway, is now south central Texas distributor for Bantam Supercargo trailers.

Cambridge, Mass.: Dura-Bilt Body Co., 2419 Massachusetts Ave., offers full sales and service facilities for Bantam Supercargo trailers.

Charlotte, N. C.: A new factory branch for Snap-On Tools Corp. has been opened at 210 S. Poplar St.

Cincinnati: Oltman-O'Neill Co. (truck bodies) has opened a new Norwood branch, convenient to the Norwood Chevrolet assembly plant, at 3569 Montgomery Road.

Dallas: H. A. Whaley Co., 2017 Cedar Springs St., now handles the garage equipment line of Associated Producers, Inc., in Texas, Arkansas, Oklahoma and Louisiana.

New York: Diamond [T] Truck Sales Co. has opened an elaborate new sales and service building on 11th Ave. between 50th and 51st Sts.

Oakland, Cal.: GMC Truck & Coach Div. has opened the first of six new master parts warehouses at 10626 East 14th St.

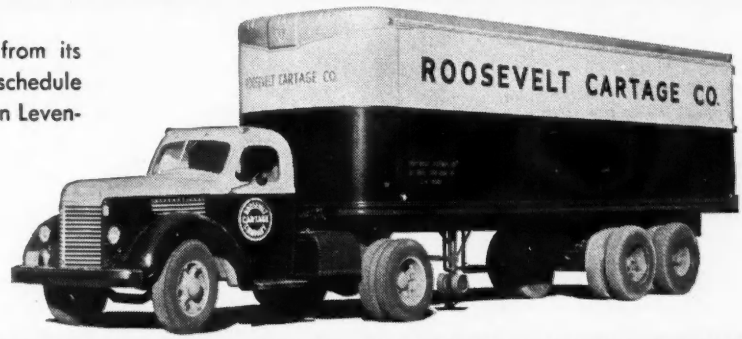
Rockford, Mich.: Burch Body Works, Bantam Supercargo trailer distributor, has opened new headquarters at 202 Monroe St.

Toledo: Supercargo Trailers, Inc., at 624 Brown Ave., has been named distributor for the Bantam Supercargo trailer line.

Toronto: Harold Jeffery Automotive Products, Ltd., 539 King st., W., has been named distributor for Associated Producers, Inc.

(TURN TO PAGE 82, PLEASE)

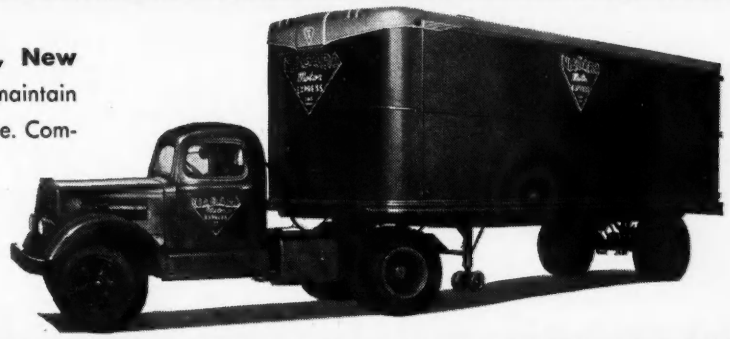
Roosevelt Cartage Company reaches out from its modern Chicago Terminal to maintain a regular schedule throughout Illinois, Indiana, and Wisconsin. Mr. Ben Leventhal, Company President, remarked that he has seen Trailmobile's excellent service at work—and has more than once been grateful for the friendly cooperation and sincerity of his nearby Trailmobile Branch.





Harwood Trucking, Inc., Marion, Indiana, is known for top service in hauling general commodities—and rolling through Indiana, Illinois, Ohio, Wisconsin, West Virginia, Michigan, Missouri and Kentucky with glass and paper products. Owner and President, Mr. M. W. Harwood, declared that Trailmobile is built to save weight, but is unequalled in strength and ruggedness.

Niagara Motor Express, Inc., Syracuse, New York, now operates from ten large terminals to maintain a fast and dependable coverage of New York State. Company President, Mr. J. C. Durkin, enthusiastically reported that Trailmobiles give long service on an economical basis in the tough over-the-road hauls his operations demand.



For EXTRA Strength with LESS Weight

The Trend is to TRAILMOBILE

Indeed, there are plenty of reasons why trailer users everywhere are switching to Trailmobile. One of them is Trailmobile's profit-wise combination of extra strength with less over-all weight.

This is the result of Trailmobile's advanced design—with load-distributing understructure and diamond sides, which eliminate needless weight and increase strength. Of course this means bigger payloads, reduced maintenance, and longer trailer life for much greater profit!

And operators themselves are quick to agree that it is always a pleasant experience being efficiently served at any one of Trailmobile's 73 Customer Service Centers.

Read the above statements of typical Trailmobile users. Then visit your nearby Trailmobile Branch—and check for yourself these and many other reasons why country-wide The Trend Is To TRAILMOBILE.

THE TRAILMOBILE COMPANY — CINCINNATI 9, OHIO

INTRODUCING • • • (NEWSCAST CONTINUED FROM P. 80)



...EDWARD H. HOLMAN as manager of sales and merchandising for the tire division of The Dayton Rubber Mfg. Co. For the past 18 years Mr. Holman has been associated with the Firestone Tire & Rubber Co., recently as manager of truck tire sales.

...VICTOR B. DAY who has been named executive vice-president of the Bear Mfg. Co. and WALTER V. HALL who has joined the same company as marketing specialist.

...V. E. MCMULLEN as executive vice-president and R. E. HUTHSTEINER as vice-president and general manager of Cummins Engine Co., Inc. LEONARD W. BECK has been named general sales manager and WALDO M. HARRISON is controller.

...ROBERT E. BUSEY, formerly of White Motor Co., who is now in charge of Truck Engineering at Willys-Overland. PAUL HUBER is the new director of research and A. J. JUNKER is truck chassis engineer.



...R. M. PALMER as sales engineer for Reo Motor Co. He formerly held several fleet sales positions with the General Motors organization.

...W. L. MCCRACKEN as director of research and manager of alkali manufacturing for Detrex Corp.

...JOHN L. LENKER as assistant manager of the New York sales division for Gulf Oil Corp.

...R. G. PEDRICK as New England sales representative for the Manley Mfg. division, American Chain & Cable Co., Inc.

...these Electric Auto-Lite appointees: E. A. SPENCER as sales office manager in Toledo, K. B. WOYAME as national accounts manager, M. H. SMITH as field supervisor (from Toledo), FRED VANZO as supervisor of the Central division (from Chicago) and R. F. MAW as supervisor of the St. Louis district.

...J. R. DAVIS, former Ford car advertising manager, as director of sales promotion for the Ford Motor Co.

...A. SPRENGER and EDGAR KNAPP as district managers of Moog Industries, Inc. Mr. Spencer will cover Ohio and eastern Pennsylvania, Mr. Knapp, New England.

...RONALD H. WETHERINGTON as southeastern division sales manager for Toledo Steel Products Co.

...OSCAR B. LEWIS as assistant sales manager and E. OLIVER JONES as manager of customer services for Ethyl Corp.

...J. C. VAN ALLEN, now responsible for Willard Storage Battery Co. replacement, engineering and manufacturers sales in the Detroit area. Also these district sales managers: G. A. BRADFORD, New England; F. F. KEEFE, New York, and W. L. BOWRON, Dallas.

...J. W. COOPER as manager of International Harvester's new Baltimore parts depot and these newly-appointed assistant truck branch managers: A. C. LANHAM, Salt Lake City; L. W. MADERY, Indianapolis; A. F. JACKSON, Tulsa, Okla., and H. E. BROADWELL, Billings, Mont.



...GEORGE W. MARSHALL, JR. as general sales manager, Asbestos Products Div. of Raybestos-Manhattan, Inc.

(TURN TO PAGE 85, PLEASE)

On New Equipment..

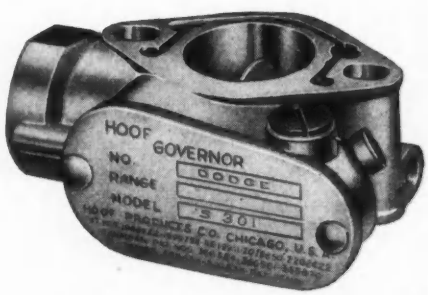


MORE AND MORE FLEET OWNERS

Specify Hoof Governors

The vital part played by Hoof Governors in the wartime conservation of commercial vehicles points the way to more efficient, lower cost operation now. Wise operators are specifying Hoof Governors right from the start.

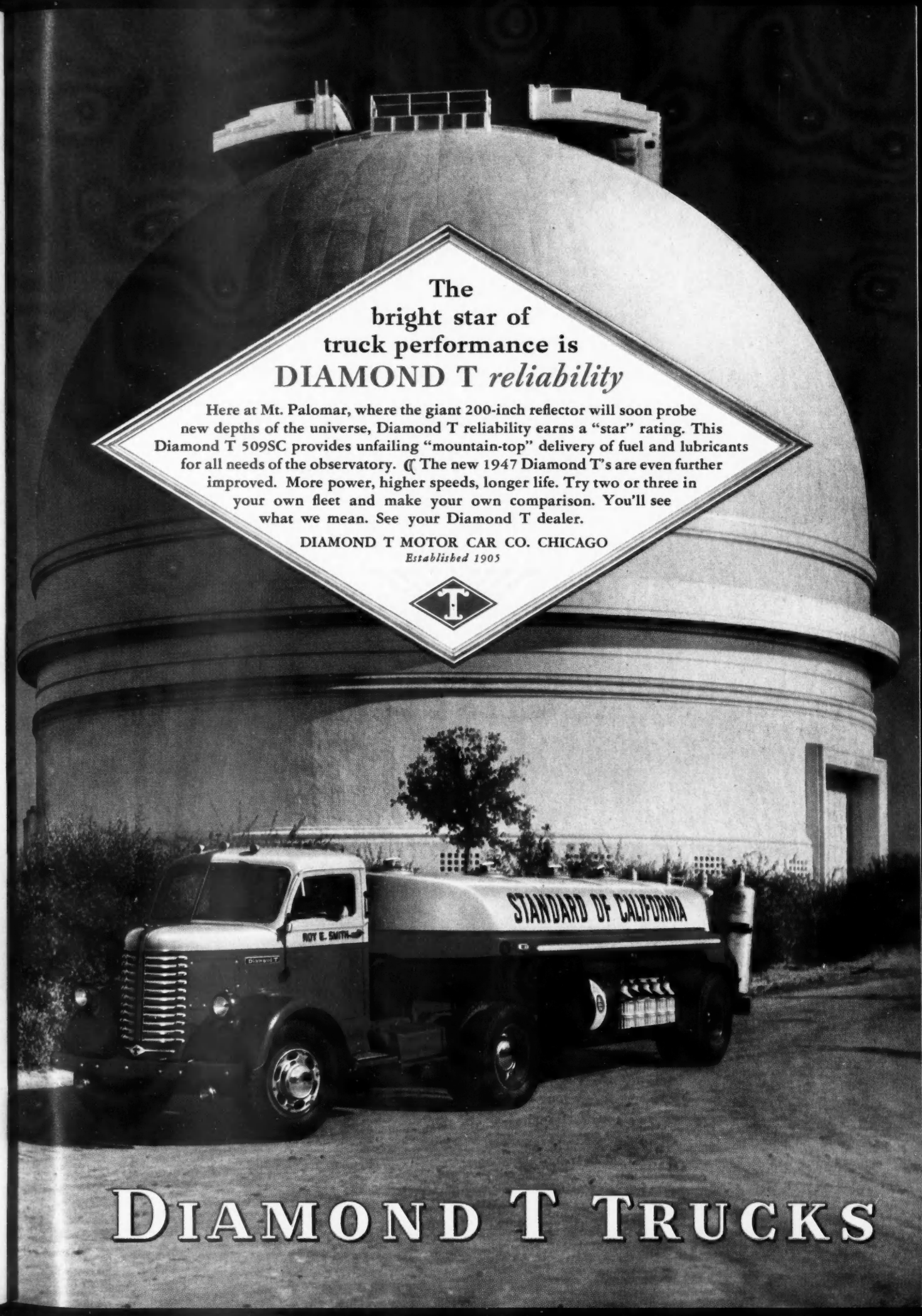
Hoof Governors are available in both key and seal types.



HOOF PRODUCTS COMPANY

6543 South Laramie Ave., Chicago 38, Illinois

HOOF *GOVERNORS SET THE PACE*


The
bright star of
truck performance is
DIAMOND T reliability
Here at Mt. Palomar, where the giant 200-inch reflector will soon probe new depths of the universe, Diamond T reliability earns a "star" rating. This Diamond T 509SC provides unfailing "mountain-top" delivery of fuel and lubricants for all needs of the observatory. ℂ The new 1947 Diamond T's are even further improved. More power, higher speeds, longer life. Try two or three in your own fleet and make your own comparison. You'll see what we mean. See your Diamond T dealer.
DIAMOND T MOTOR CAR CO. CHICAGO
Established 1905
STANDARD OF CALIFORNIA
ROY E. SMITH
DIAMOND T TRUCKS

Goes Farther..Wears Better..Costs Less!

Specify TOLEX* UPHOLSTERY



★ **IT'S SUPER-TOUGH!** Withstands rough, hard service usage.

★ **IT'S WEATHER-PROOF**—resists water and outdoor exposure.

★ **IT'S EASY TO CLEAN**—just wash with warm water and soap.

★ **IT'S STAIN-PROOF...** can be FLAME-PROOFED.

★ **IT'S DURABLE...** outstanding for long wear and long life.

★ **IT'S EYE-APPEALING!** Offered in broad range of attractive colors and effects.

Write for samples and more details. Textileather Corporation, Toledo, Ohio.



** A registered trade name describing plastic leathercloth.*

INTRODUCING • • •

(NEWSCAST CONTINUED FROM P. 82)



...CHARLES R. CROWDER, vice-president Van Norman Co., who has been named junior vice-president of the National Standard Parts Association.

...I. C. MOREAU, as assistant manager, tank trailer division, Fruehauf Trailer Co.

...W. P. DUTROW as Omaha territory branch manager for the automotive division of Wagner Electric Corp.

...ROY HALL as truck and fleet sales manager for Ford Motor Co.'s Edgewater (N. J.) district.

...JAMES W. IRWIN, former independent employe relations counsel, who joined the Ford Motor Co. on March 1 as assistant to the president and director of public relations.

...GENE W. ANDERSON who heads a newly established department on service methods and processes of Federal-Mogul Corp.

...DANIEL E. NOBLE, now vice-president in charge of the Motorola Communications and Electronics division of Galvin Mfg. Corp.

...DUGALD MCKINNON as Portland (Ore.) district manager for United States Rubber Co.'s tire division.

...JOHN R. MUNN as chairman of the board, WILLIAM F. MCGUINNESS as president and GREGORY OBERST as treasurer of Elastic Stop Nut Corp.

...JOHN ANDRES as Albany district manager of P & D Mfg. Co. The territory covers most of New England and eastern New York state.

...ROBERT W. HADLEY as president and HAROLD F. SMITH as treasurer of American Coach & Body Co. Both men were also elected directors. The following are newly appointed sales managers for the same company: DEMING BRONSON, central division; HOMER A. FEYEN, midwestern division, and WILLIAM R. HALL, eastern division.



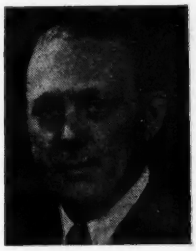


...FRED W. PARKER (left), newly appointed as assistant to the president, Timken-Detroit Axle Co. KENNETH P. HAYES (right) succeeds Parker as director of service.

...WARREN D. FOLTZ, as New York regional manager for Bendix-Westinghouse Automotive Air Brake Co.

...HARVEY S. PLUMMER as sales manager of the fluid heat division (automotive and marine heaters), Anchor Post Products, Inc.

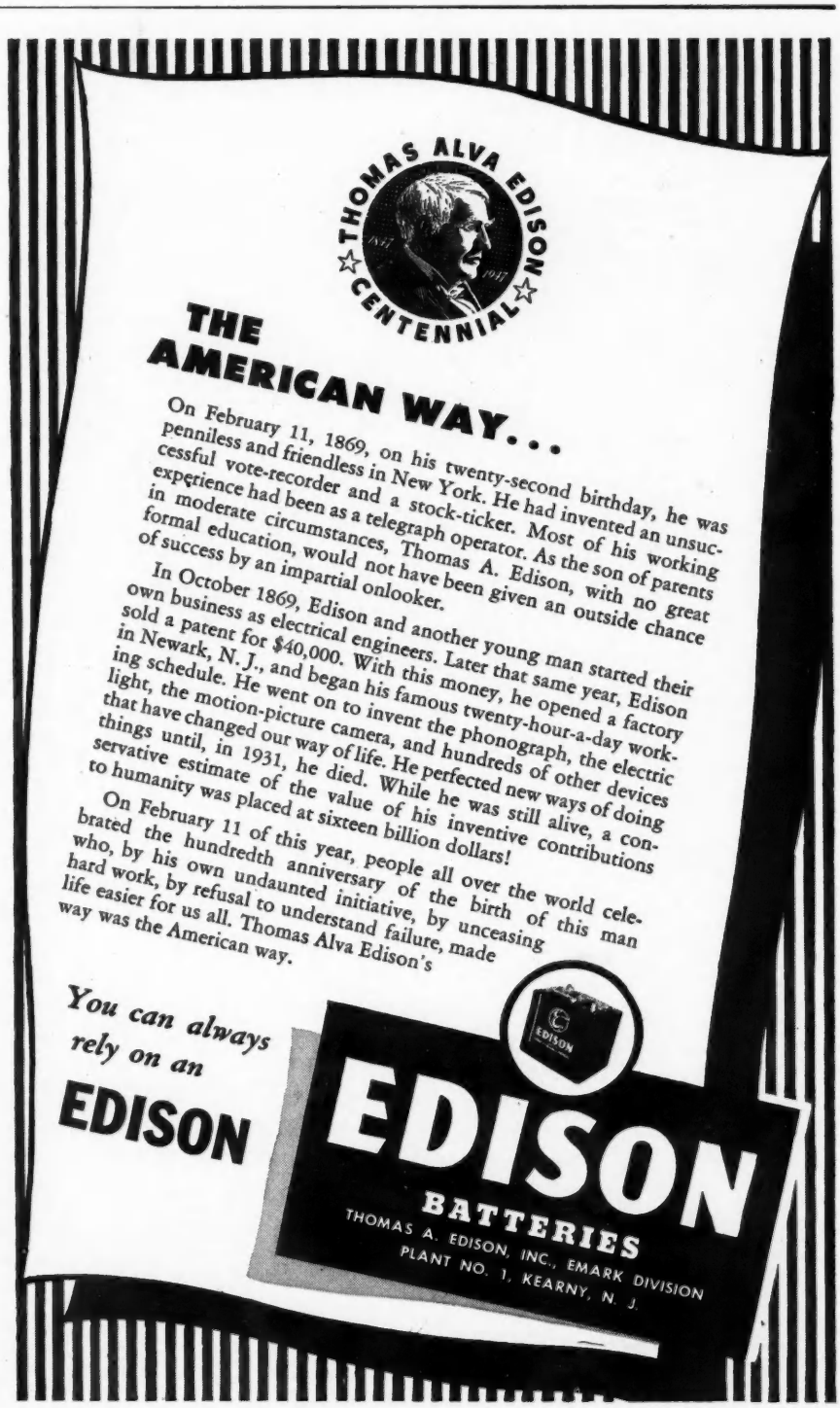
...J. P. KALIVODA, manager, sales engineering division of Fruehauf Trailer Co., who has been appointed chairman of the transportation committee of the Frozen Food Institute.



...H. P. FORTON as manager of sales for Service Station Equipment Co. He has been with the company since 1933.

...MAX M. ROENSCH who joins the Ethyl Corp.'s research laboratories in Detroit where he will be on the engineering staff headed by J. B. Macauley.

(TURN TO PAGE 224, PLEASE)



WASHINGTON RUNAROUND

by GENE HARDY,
CCJ Washington Bureau

ICC Reports Safety Progress . . . Truman Program Gets Action . . . Army Needs Transport Help
Truck Production Climbs Slowly . . . Trailer Output Breaks Record . . . 1000 Permits for 2-Way Radio

ICC Reports Safety Progress

Much of the news in the Nation's Capital affecting truck operators revolves around a simple six-letter word—"safety." The Section of Safety, Bureau of Motor Carriers, ICC, reports considerable progress on the revision of the motor carrier safety regulations. Staff members concerned have prepared drafts on portions of the regulations. Staff conferences have been held and these drafts gone over collectively. They are now being edited and re-drafted, prior to submission to the Commission. The problem of front-wheel brakes on large units, raised by western truckers, is still under consideration. While nothing definite has been decided, it seems likely that the Section of Safety will begin tests in the near future.



. . . TO MAKE YOUR SPRING COSTS DROP

Call nearest Rowland Distributor. He's supplied by these branches:

ATLANTA 3, Ga., William and Harvey Rowland, Inc., 449 Marietta St., N. W.
BIRMINGHAM 3, Ala., Birmingham Spring Service, Inc., 2017 Avenue B, South
CHICAGO 16, Ill., William and Harvey Rowland, Inc., 2732 Indiana Avenue
JACKSONVILLE 4, Fla., Jacksonville Spring & Alignment Co., 137 Jefferson St.
PHILADELPHIA 30, Pa., William and Harvey Rowland, Inc., 1414 Fairmount Ave.
PITTSBURGH 13, Pa., Point Spring Co., 419 Melwood Street

Here's a positive, definite way to cut spring costs—proved by many fleet operators. *Put your vehicles on a regular program of spring inspection.* Be sure to have this work done in a qualified shop—by a Rowland Spring Distributor. Knowing springs—how to make them deliver a full lifetime of service, what to look for that might cause premature failure and how to prevent serious trouble—is the business of Rowland Spring Distributors—and they're good at it. They have a wealth of practical experience gained over the years in working on thousands of trucks and buses. Use your nearby Rowland Spring Distributor for SPRING, muffler, universal joint and wheel suspension service. Wm. & Harvey Rowland, Inc., Frankford, Philadelphia 24, Pa.

ROWLAND SPRINGS — CERTIFIED ALLOY STEEL — ROWLAND SPRINGS — Est. 1795

SPRINGS • MUFFLERS • UNIVERSAL JOINTS • WHEEL SUSPENSION PARTS

Truman Program Gets Action

Over at the White House, President Truman has called a meeting of the Committee on Conference Reports, which was set up at the time of the President's Highway Safety Conference last May, to appraise the progress of the work outlined at the Conference and to devise whatever plans may be necessary to promote wider adoption of the "Action Program" recommendations. The meeting is to be held on June 18, 19 and 20. Safety organizations are enthusiastic over this meeting, since it indicates that the work of the conference last spring will not be allowed to go the way of most high-sounding resolutions which emanate from Washington. Governors of all the states are expected to render progress reports That the President's original conference has had some results can be discerned from the fatality record for 1946. Last year, there were about 33,500 highway fatalities or 9.7 per 100,000,000 vehicle miles—the lowest rate recorded in the past quarter century.

Army Needs Transport Help

Setting forth his views on transportation in the War Department's research and development program for the fiscal year 1947, General Dwight D. Eisenhower declared that future developments of highway transport equipment must follow closely the Army Ground Forces' vehicle developments. Dealing with wheeled and tracked vehicles, the General said that results of tests during the past summer indicate that any vehicle with a unit pressure higher than five psi is completely incapable of off-road operation in many localities. The results of tests to be conducted this winter should indicate a future line for the development of low ground pressure transport, it was pointed out. There are currently some gaps in the development projects, particularly in the weight class below 2½ tons. Future programs, it was declared, must be directed toward complete coverage; how-

(TURN TO PAGE 88, PLEASE)



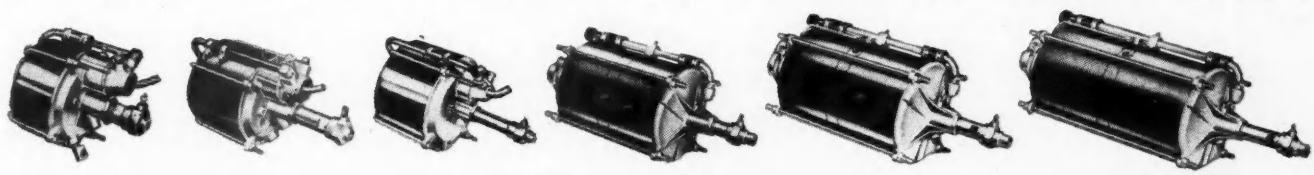
1st in power braking

When you specify Hydrovac* for power braking, your choice is confirmed by the judgment of leading truck manufacturers. With over one and one-half million units built and performance proved by billions of miles of service, Hydrovac is today's first choice for original factory equipment on the new truck and tractor models. Hydrovac consists of one compact, sealed unit, and can be installed anywhere on the chassis with a minimum of changes in the original hydraulic brake connections. Utilizing engine manifold vacuum, it adds smoothly controlled hydraulic braking power to the slightest foot-pedal pressure.

For your power braking needs, investigate Hydrovac—find out for yourself why manufacturers, dealers and drivers agree it is 1st in *Power Braking*. *REG. U.S. PAT. OFF.

HYDROVAC—Hydraulic-Vacuum Power Braking Unit

A COMPLETE LINE OF SIZES AND TYPES TO FIT ALL COMMERCIAL VEHICLES



BENDIX PRODUCTS DIVISION of Bendix AVIATION CORPORATION

SOUTH BEND 20, INDIANA

(CONTINUED FROM PAGE 86)

ever, it is felt that current development work being done on components will facilitate the rapid design and testing of vehicles for specific purposes. All possible integregation of Highway Transport and Army Ground Forces developments, it was pointed out, will insure a sound maintenance program.

Trailer Output Breaks Record

With a December total of 6,886 units, the truck trailer industry smashed all peace-time production records in ringing up a total of 76,236 during 1946. December shipments totaled 6,138 units. While December production dropped from the November total of 7,449 units, only three months during 1946 showed a higher total than that registered in the last month of the year.

Excise Taxes Stick

The Congressional decision to leave excise tax rates on automotive items and other products unchanged until an overall study of the problem can be made was based on the promises of the Republican majority to reduce personal income taxes. That the automotive levies are good revenue producers is illustrated by the following tabulation showing estimated revenue for the fiscal year 1948:

Automobile bodies, chassis and motorcycles, $271,000,000; truck bodies, chassis and tractors; $59,000,000; parts and accessories, $78,000,000; inner tubes and tires, $162,000,000; gasoline and motor fuels, $486,000,000; lubricating oils, $89,000,000; and transportation of property, $270,000,000—a total of $1,415,000,000.

Truck Production Climbs

Continuing their record pace, truck producers turned out 102,727 units in January—an increase of 1,243 units over the previous month. The marked increase in the production of heavier models is encouraging. During January, production of all weight classes, except medium, showed healthy increases. Manufacturers forecast a February total of 123,039 units, which is likely to be reached.

Automobile output dropped to 252,100 cars during January, as compared with 262,076 in December, 1946. The drop is attributed largely to the model changeover which was put into effect during the month.

Major shortage items affecting auto and truck producers are pig iron and steel.

Truck Production
January 1947

	Forecast	Production	%
Light	52,426	43,291	82.57
Medium	56,792	48,978	86.24
Light-Heavy	9,465	7,612	80.42
Heavy-Heavy	3,701	2,846	76.89
Total	122,384	102,727	83.93

1000 Permits for 2-Way Radio

Approximately 1000 experimental authorizations have been issued by the Federal Communications Commission in connection with the development of mobile two-way radiotelephone services. This testing program involves about 12,000 vehicles of various types, including trucks, taxicabs and private cars. These experimental authorizations are apart from such recognized services as police, fire, special emergency, aviation, marine, railroad, public utilities, and geological, which account for over 27,000 licenses.

The common carrier trucking industry has been given only three such experimental grants as of the end of January, mostly for intercity service.

Grants to other firms, organizations and individuals experimenting with their own vehicles include such enterprises as hauling ready-mixed concrete, picking up and delivering merchandise, armored car delivery of cash and valuables, railway express trucks, fuel trucks, highway passenger buses, ambulances, doctors' vehicles, river and coastal boats and even aircraft.

68% More Replacement Tires

The 15,837,039 truck and bus tires produced in 1946 were 3 per cent less than the record of 16,354,445 units built in 1945 which was the peak of military demand. This was due to the fact that the wartime backlog and current demand for large truck and bus tires had been fairly well met by the middle of 1946, resulting in

(TURN TO PAGE 90, PLEASE)

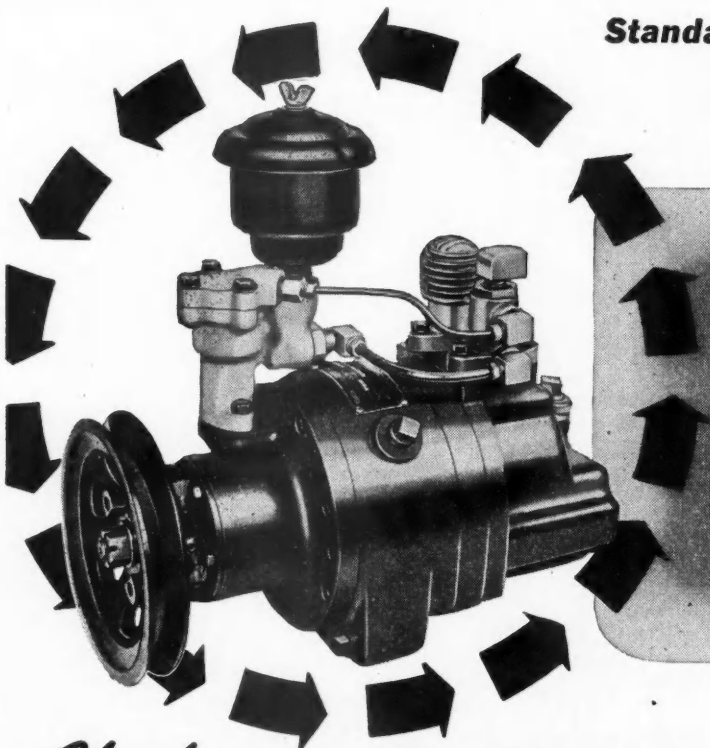


Herbrand

The availability of highest pre-war quality materials, necessary to uphold HERBRAND'S traditional excellence, is still limited. As HERBRAND will not compromise on the established *quality* of its tools, this means that their *quantity* is still not great enough to meet present demand—although every day more and more are reaching the market . . . Meanwhile, all the HERBRAND tools that *are* available are of the same top quality that has made their name a by-word among skilled mechanics for over 65 years.

THE HERBRAND CORPORATION
FREMONT, OHIO

AIR--and Lots of it!



Standardize on

Wagner Air Brakes

. . . the system with the ROTARY COMPRESSOR ---that provides air to spare for all braking needs.

Check THESE ADVANTAGES of the WAGNER Rotary Air-Compressor

Every part of an air brake system is important—but the most important of all is the compressor—the *heart* of the air brake system. Not only must it operate unfailingly to assure plenty of air at all times, but it must do so economically. The Wagner Rotary Compressor meets both these requirements.

Only the Wagner rotary compressor has ALL of these features so desirable in automotive air brake systems:

- Rotary motion of all moving parts.
- In running balance at all times.
- Longer belt life due to more uniform torque loading.
- Low friction losses—therefore high operating efficiency.
- A predetermined air pressure range automatically maintained.
- Operating parts are lightly stressed, thereby insuring long life and low maintenance cost.
- Extremely quiet in operation.
- Self-contained oiling system—uncontaminated by engine waste products.
- Compact—requires minimum installation space.
- Low operating temperature prevents carbon formation in the compressor and delivery lines.
- Adaptable to *all* types of automotive brake systems.

For complete information, write for Bulletin KU-50B, addressing your request to Wagner Electric Corporation, 6470 Plymouth Avenue, St. Louis 14, Mo.

Wagner Electric Corporation EST. WE 1891

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID · NoRol CoMoK BRAKE LINING · AIR BRAKES · TACHOGRAPHS ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

The System With The Rotary Compressor

K47-5

(CONTINUED FROM PAGE 88)

the concentration of production during the last half of the year on smaller tires. Of the total truck and bus tire output, 10,810,298 units were shipped for replacement, an increase of 68 per cent over 1945. The House Executive Expenditures Committee is investigating the enforcement of the various anti-racketeering statutes. The investigation is aimed primarily at the Hobbs Act, which prohibits interference with interstate commerce by robbery or extortion.—The three-lane highway has been shown to be a veritable death trap with an accident rate three times higher than on four-lane roads, according to the Federal Works Agency.

Federal's '47 Line

(CONTINUED FROM PAGE 70)

alignment and weight distribution. Torque rods are arranged in parallelogram, transmit driving and braking forces from the axles to the frame.

Universal joints are Spicer latest needle bearing type with large diameter accurately balanced shafts of seamless steel tubing. The rear shaft is of the No. 1700 Series, the forward shaft of the No. 1600 Series, while the inter-axle shaft is of wide angle No. 1600 Series.

Six-wheelers have Bendix-Westinghouse air brakes as standard equipment and feature adoption of the latest type B-W air compressor, two-cylinder, 12 cu. ft. capacity, water-cooled and mounted off the front-end of the engine. With this system, the front wheel brake limit valve is installed as regular equipment.

Steering ease consistent with the size and load-carrying capacity of these vehicles has been given considerable attention. Standard equipment is the Gemmer Model 500, heavy-duty, triple tooth roller steering gear with anti-friction mounting combined with specially designed steering geometry. Ratio is 28.4 to 1, fully adjustable for wear.

Budd wheels are used throughout. They feature the special 13 3/16-in. bolt circle on the two larger models.

Chassis frames have been developed with a view to freedom from failure under extreme operating conditions by eliminating areas of stress concentration. The frame reinforcement system consists of two inner angles and a carefully patterned fishplate of 5/16 in. thickness, all cold-riveted to the side rails. The fishplate is omitted on the short wheelbase 663MA, however, since the two angles offer sufficient strength.

One of the basic sales features of the Federal line is that of providing the vehicle with complete equipment as part of the standard priced package. This is true of the cab as well as of the chassis. For example, the windshield wipers are air driven and two are fitted as regular equipment. The same is true of sun visors, rear view mirror, adjustable seat and back cushions, safety glass. To prevent breakage of window glass, the side panes are protected by a steel frame. The windshield glass area has been substantially increased to provide better visibility. Cabs are of all-steel construction and cushion-mounted on a three-point suspension, using rubber pads with spring-loaded fastenings to absorb violent shock.

The 65MA, as mentioned earlier, has specifications similar to the 65M2, previously announced, and is powered with the Continental R-6602 engine.

END

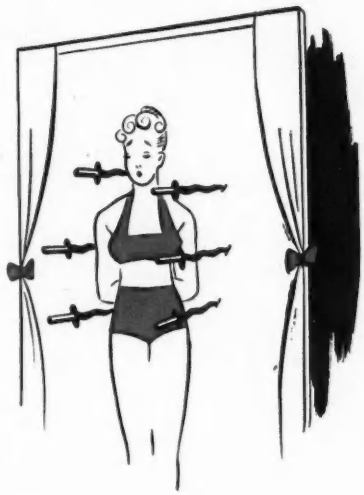
(Please resume your reading on P. 72)



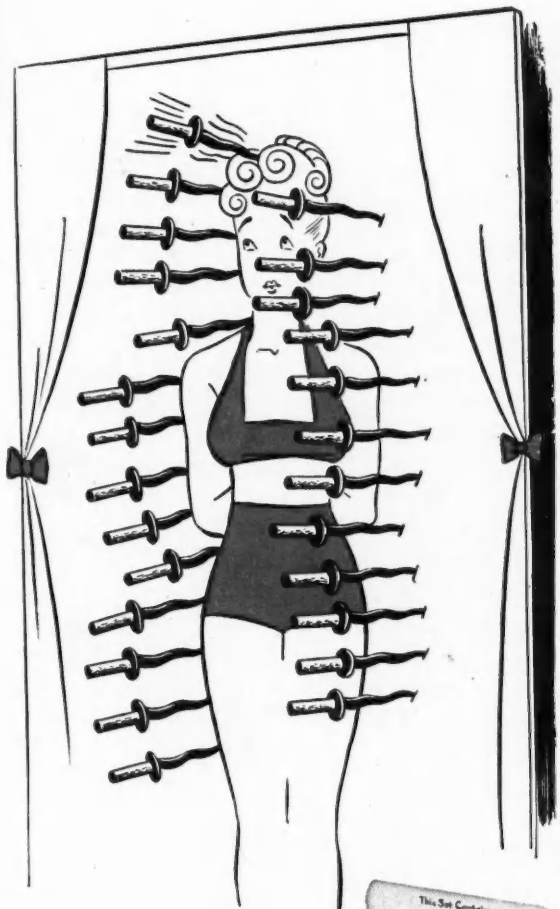
For minimum wear, also...



NOT 2...



NOT 6...



but 26 basic designs

OF SEALED POWER PISTON RINGS

Minimum wear on cylinder walls is a "must" for BALANCED PERFORMANCE by piston rings. So are oil control, blow-by control, and low friction. You're sure of ALL FOUR when you use Sealed Power Individually Engineered Ring Sets, made up from twenty-six (26) basic designs of piston rings. Whatever the make, model, or cylinder wear condition, there is a Sealed Power Set specifically engineered to do the best possible job. Sealed Power has been refining these sets for seven years, has been producing rings for car, truck, and engine builders 35 years. For best results, re-power with Sealed Power motor parts. Sold by leading distributors. Sealed Power Corporation, Muskegon, Michigan and Stratford, Ontario.

Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts

INDIVIDUALLY ENGINEERED



SEALED POWER PISTON RINGS

BEST IN NEW TRUCKS! ★ BEST IN OLD TRUCKS!

KEEP YOUR WAR BONDS!
GET $4 FOR $3

This is the milestone that grew out of an urge

It's the control lever of the new Mack Mono-Shift Transmission—the first great postwar improvement in heavy duty truck design.

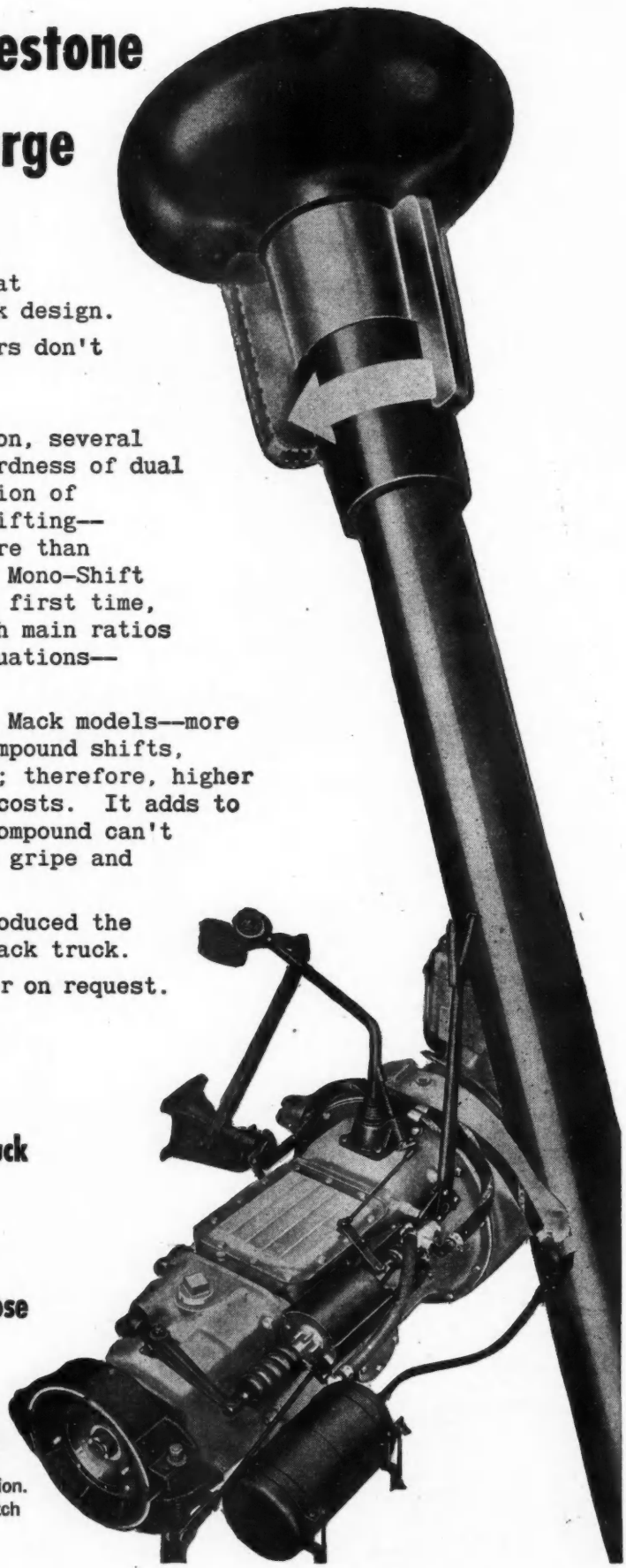
And it came about because Mack engineers don't believe in letting well enough alone. They have the urge to make it better.

In the standard multi-speed transmission, several things didn't satisfy Mack. The awkwardness of dual gearshift levers...the uneven progression of speeds...the loss of momentum while shifting—Mack engineers didn't like them any more than drivers do. So they developed the Mack Mono-Shift Transmission, making possible, for the first time, one-hand, simultaneous shifting of both main ratios and compounds—10 speeds in ideal graduations—with a single control.

Mono-Shift is now available in several Mack models—more later. It permits pre-selection of compound shifts, quicker shifting without momentum loss; therefore, higher average speeds, and reduced operation costs. It adds to safety in hilly country, because the compound can't neutralize. And it takes a lot of the gripe and drudgery out of the driver's job.

The kind of engineering genius that produced the Mono-Shift goes into every part in a Mack truck.

Full details are contained in a circular on request.



Mack Mono-Shift Duplex 10-speed transmission. Just a flip of the finger and a kick on the clutch pedal... and the shift is made instantly.

Mack

since 1900, America's hardest-working truck

Mack Trucks, Inc., Empire State Building, New York 1, New York. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and dealers in all principal cities for service and parts. In Canada, Mack Trucks of Canada Ltd.



Trucks for every purpose

Truck Specifications Table

OF CURRENT PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

Key to Definitions, References and Abbreviations

DEFINITIONS

MAKE AND MODEL
Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

(2) International Harvester—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

Also the company reserves the privileges of assigning special gross vehicle ratings for any chassis providing in the opinion of our engineering department, the type of service justifies the new rating without decreasing the safety factor designed into the truck.

(a)—Available with Eaton Two-Speed Axle designated KS Models.

(b) Current models will include, at additional cost, certain items not considered standard equipment. These items are included in the specifications and are listed below—Model K-3, oversize transmission; Model K-6, K-7 and K-6-F, oversize brakes; Model K-8, oversize engines and brakes; Model K-10, oversize engine, transmission and brakes; Model KR-11, oversize engine and transmission; Models K-8F and K-11-F, oversize engine and brakes.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
BW—Bendix-Westinghouse
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken.
Tw—Timken-Westinghouse
TW—Timken-Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Ws—Westinghouse.
WW—Westinghouse or Wagner

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.
Dp—Dual Primary

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.
Z—Reinforced (X) member frame, box type sections.

GOVERNOR STANDARD

V—Yes.
N—No.

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive
F—Full-floating.
Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
¾—Three Quarters Floating.
½—Semi-Floating
T—Torque Tube

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
6—All wheels.

(Continued from Page 93)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive Torque	Gear Ratio Range In High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Available																													
1	....C8200-SP		126	133	15000		7.00/20D	7.50/20	Wau 6BM	6–3½x4¼	263	5.9	180	78–2800	7–2½x10¼	N	WG T9	4	Tim 53440H	SF	H	** –6.67	Tim 32502H	L4IH			a	TX	Opt	10x3x¼	T
2	....C-250-SP		105	....	18000		7.50/20D	8.25/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2½x10¼	N	Fu 5A330	5	Tim 54411H	SF	R	6.83–7.4	Tim 32502H	L4IH	334	583	a	TX	Opt	10x3x¼	T
3	....C8-250-SP		105	....	20000		8.25/20D	9.00/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2½x10¼	N	Fu 5A330	5	Tim 54411H	SF	R	6.83–7.4	Tim 32502H	L4IH	334	583	a	TX	Opt	10x3x¼	T
4	....C8-400-LSP		105	....	21500		9.00/20D	10.00/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2½x10¼	N	Fu 5A330	5	Tim 56410H	SF	R	6.83–7.4	Tim 35000H	L4IH	334	583	a	TX	Opt	12x3x¼	T
5	....C8-500-SP		105	....	22000		9.00/20D	10.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2½x12½	Y	Fu 5F430	5	Tim 56410H	SF	R	6.83–7.4	Tim 35000H	L4IH	334	583	a	TX	Opt	12x3x¼	T
6	....C8-550-SP		105	....	24000		9.00/20D	10.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2½x12½	Y	Fu 5F430	5	Tim 58300H	SF	R	6.83–7.4	Tim 35000H	L4IH	380	660	a	TX	Opt	12x3x¼	T
7	....C8-550-SPX		112	....	32000		10.00/20D	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2½x12½	Y	Fu 5F430	5	Tim 8200H	2F	R	** –7.84	Tim 26450H	L4IH	570	1051	a	TX	Opt	14x3x¼	T
8	....C8-600		Opt	Opt	36000		11.00/20	11.00/24	Wau 6SRKR	6–4⅝x5½	517	5.9	365	125–2300	7–2½x12½	Y	Fu 5F430	5	Tim 8200PA	2F	R	** –7.84	Tim 27452TW	L4IH	722	1051	a	TX	Opt	14x3x¼	T
9	....C8-600-SP		Opt	Opt	40000		11.00/20	11.00/24	Wau 145GK	6–5¼x6	779	5.6	590	186–2000	7–3½x17¾	Y	Spi 7841▽	8	Tim S8200PA	2F	R	6.42–7.84	Tim 27452TW	L4IH	722	1051	a	TD	Opt	14x3x¼	T
10	(D)C8-600-SP.Opt.		Opt	Opt	40000		11.00/20	11.00/24	Cum HB600	6–4⅞x6	672	17.5	510	150–1800	7–4½x16½	Y	Spi 7841▽	8	T SW3012PA	WF	R	** –6.16	Tim 27452TW	L4IH	....	....	A	TD	Opt	14x3x¼	T
11	Chevrolet....DP	744	115	115	4600	2460	6.00–16S	15S	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	3	Own	Hy	T	** –4.11	Own	O4IH	159	242	Co	2I	38¼	5¾x2¼x⅛	C
12	....DR	833	125	125	5800	2675	15S	7.00/17S	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	3	Own	HyF	H	** –4.57	Own	O4IH	178	272	Co	2I	48½	5⅜x2¼x⅛	C
13	....DS	833	134	134	8800	3020	7.00/17S	7.00/18	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	4	Own	HyF	H	** –5.14	Own	O4IH	243	371	Co	2I	57¾	7x2¾x⅛	C
14	....PJ	952	134	134	♦13000	3350	7.00/20S	7.00/20	O-Thrift Mas.*	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	4	²Own	HyF	H	5.43	Own	O4IH	330	478	Co	2I	57¾	7x2¾x⅛	C
15	....PK	983	160	160	♦13000	3530	7.00/20S	7.00/20	O-Thrift Mas.*	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	4	²Own	HyF	H	5.43	Own	O4IH	330	478	Co	2I	83¼	7x2¾x⅛	P
16	(School bus)..PL	1118	160	160	12000	3790	6.50/20D	7.00/20	O-Thrift Mas.*	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	5.43	Own	O4IH	330	478	Co	2I	....	7x2¾x⅛	P
17	.....PVS	1328	134	134	14000	4120	7.50/20D	7.50/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	5.43	Own	O4IH	330	478	Co	2I	57¾	7x2¾x⅛	P
18	.....PWS	1346	160	160	14000	4285	7.50/20D	7.50/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	83¼	7x2¾x⅛	P
19	(c.o.e.).....PP	●1567	109	109	16000	●4340	7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	189	90–3100	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	62½	7x2¾x⅛	P
20	(c.o.e.).....PR	●●1605	132	132	16000	●4560	7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	189	90–3100	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	86	7x2¾x⅛	P
21	(c.o.e.).....PS	●1625	158	158	16000	●4640	7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	189	90–3100	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	111½	7x2¾x⅛	P
22	.....PV	●1328	134	134	15000	4120	7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	57¾	7x2¾x⅛	P
23	.....PW	1346	160	160	15000	4285	7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	83¼	7x2¾x⅛	P
24	(School bus) .PX	1395	195	195	15000	4515	7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	²Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	....	7x2½x¼	P
25	Corbitt.....18BG		137	Opt	18000		9.00/20	10.00/20	Con M6330	6–4x4½	330	6.1	246	104–2800	7–2½x12	Y	Fu 5A33	5	TimH100DPH	HyF	H	** –5.29	Tim 32502H	L4IHV	....	....	a	TX	Var	8x3¼x¼	T
26	.....22BG		145	Opt	22000		10.00/20	10.00/22	Con B6371	6–4½x4½	371	6.0	280	100–2600	7–2½x13½	Y	Fu 5A43	5	TimL100DPH	HyF	H	** –5.29	Tim 35000H	L4IHV	....	....	a	TX	Var	8x3¼x¼	T
27	.....25BG		148	Opt	25000		10.00/20	11.00/22	Con B6427	6–4¾x4⅞	427	5.9	325	127–2600	7–2⅞x13⅞	Y	Fu 5A43	5	Tim Q100P	HyF	H	** –6.17	Tim 35100TW	Ws4IA	....	....	a	TX	Var	8½x3½x⅝	T
28	(T).....18TG		137	137	18000		9.00/20	10.00/20	Con M6330	6–4½x4½	330	6.1	246	104–2800	7–2½x12	Y	Fu 5A33	5	Tim H100P	HyF	H	** –5.29	Tim 32502TW	Ws4IA	....	....	a	TX	60½	7½x3½x⅝	T
29	(T).....22TG		145	145	22000		10.00/20	10.00/22	Con B6427	6–4¾x4⅞	427	5.9	325	127–2600	7–2⅞x13½	Y	Fu 5A43	5	Tim L100P	HyF	H	** –5.29	Tim 35000 TW	Ws4IA	....	....	a	TX	60½	8x3½x¼	T
30	(T).....25TG		148	148	25000		10.00/22	11.00/22	Con R6513	6–4½x5½	513	5.9	400	164–2600	7–3¼x14½	Y	Fu 5A620	5	Tim Q100P	HyF	H	** –6.17	Tim 35100TW	Ws4IA	....	....	a	2	60½	8½x3¼x⅝	T
31	(T).....28TG		148	148	28000		10.00/22	11.00/24	Con R6602	6–4½x5½	602	5.9	460	183–2600	7–3¼x14½	Y	Fu 5A650	5	Tim R100P	HyF	H	** –6.17	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3¼x⅝	T
32	(D) (T)...22TD		145	145	22000		10.00/20	10.00/22	Her DWXD	6–4¼x4¾	404	15	330	146–2600	....	Y	Fu 5A430	5	Tim L300P	dF	H	6.32–8.20	Tim 35000TW	Ws4IA	....	....	a	TX	60½	8x3¼x¼	T
33	(D) (T)...25TD		148	148	25000		10.00/22	11.00/22	Her DRXC	6–4½x5¼	529	14	380	133–2000	7–3½x13¾	Y	Fu 5A620	5	Tim Q300P	dF	H	6.53–8.53	Tim 35100TW	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
34	(D) (T)...27TD		152	152	27000		10.00/22	11.00/24	Cum HB600	6–4⅞x6	672	17	500	125–1800	7–4½x16½	Y	Fu 5A920	5	Tim Q100P	HyF	H	** –5.29	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
35	(D) (T)...28TD		155	155	28000		10.00/22	11.00/24	Cum NHB600	6–5¼x6	743	15	575	200–2100	....	Y	Fu 5A920	5	Tim R100P	HyF	H	** –6.17	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
36	2-speed models																													
37	(T).....18TG		137	137	18000		9.00/20	10.00/20	Con M6330	6–4x4¼	330	6.1	246	104–2800	7–2½x12	Y	Fu 5A330	5	Tim H300P	dF	H	6.13–8.15	Tim 32502TW	Ws4IA	....	....	a	TX	60½	7½x3¼x⅝	T
38	(T).....22TG		145	145	22000		10.00/20	10.00/22	Con B6427	6–4¾x4¼	427	5.9	325	127–2600	7–2⅞x13¼	Y	Fu 5A430	5	Tim L300P	dF	H	6.32–8.20	Tim 35000TW	Ws4IA	....	....	a	TX	60½	8x3¼x¼	T
39	(T).....25TG		148	148	25000		10.00/22	11.00/22	Con R6513	6–4½x5½	513	5.9	400	164–2600	7–3¼x13¼	Y	Fu 5A620	5	Tim Q300P	dF	H	6.53–8.53	Tim 35100TW	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
40	(T).....28TG		148	148	28000		10.00/22	11.00/24	Con R6602	6–4½x5½	602	5.9	460	183–2600	7–3¼x13¼	Y	Fu 5A650	5	Tim R300P	dF	H	4.92–6.42	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
41	(D) (T)...27TD		152	152	27000		10.00/22	11.00/24	Cum HB600	6–4⅞x6	672	17	500	125–1800	7–4½x16½	Y	Fu 5A920	5	Tim R300P	dF	H	4.92–6.42	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
42	(D) (T)...28TD		155	155	28000		10.00/22	11.00/24	Cum NHB600	6–5¼x6	743	15	575	200–2100	....	Y	Fu 5A920	5	Tim R300P	dF	H	4.92–6.42	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
43	Sleeper Cabs																													
44	(T).....25TG		173	173	25000		10.00/22	11.00/22	Con R6513	6–4½x5½	513	5.9	400	164–2600	7–3¼x13½	Y	Fu 5A620	5	Tim Q100P	HyF	H	** –6.17	Tim 35100TW	Ws4IA	....	....	a	2	60½	8½x3¼x⅝	T
45	(T).....28TG		173	173	28000		10.00/22	11.00/24	Con R6602	6–4½x5½	602	5.9	460	183–2600	7–3¼x13½	Y	Fu 5A650	5	Tim R100P	HyF	H	** –6.17	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
46	(D) (T)...25TD		173	173	25000		10.00/22	11.00/22	Her DRXC	6–4½x5¼	529	14	380	133–2000	7–3½x13¾	Y	Fu 5A620	5	Tim Q300P	dF	H	6.53–8.53	Tim 35100TW	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
47	(D) (T)...27TD		177	177	27000		10.00/22	11.00/24	Cum HB600	6–4⅞x6	672	17	500	125–1800	7–4½x16½	Y	Fu 5A920	5	Tim Q100P	HyF	H	** –5.29	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
48	(D) (T)...28TD		180	180	28000		10.00/22	11.00/24	Cum NHB600	6–5¼x6	743	15	575	200–2100	....	Y	Fu 5A920	5	Tim R100P	HyF	H	** –6.17	Tim 26450W	Ws4IA	....	....	a	2	60½	8½x3½x⅝	T
49	Diamond T....201		119	119	8000	2800	6.00/16	7.50/16S	Her CBQXLD	6–3⅛x4¼	236	6.5	177	82–3000	7–2¼x10⅛	N	WG T9	4	Cla R650	SF	H	4.5 –5.1	Cla F250	L4IH	210	....	A	TX	52	6x2½x⅛	T
50	306		127	150	11000	3350	6.00/17	7.50/20	Hrt CBQXLD	6–3⅛x4¼	236	6.5	177	82–3000	7–2½x10½	N	WG T9	4	Cla R750	SF	H	5.1 –6.3	Cla F266	L4IH	253	....	A	TX	60	7½x3x¼	T
51	.....306H		127	150	12000	3750	7.00/20D	7.50/20	Her CBQXLD	6–3⅛x4¼	236	6.5	177	82–3000	7–2½x10½	N	WG T9	4	Eat A34-1350	SF	H	Dual Rge.	Cla F266	L4IHV	279	....	A	TX	60	7½x3x¼	T
52	.....404HH		139	189	14700	4900	8.25/20D	8.25/20	Her CBJXE3	6–3½x4¼	245	6.5	175	87–2800	7–2½x10¼	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F450	L4IHV	363	522	A	TX	60	8½x3½x¼	T
53	.....404SC		139	163	13000	4800	7.50/20D	7.50/20	Her CBJXE3	6–3½x4¼	245	6.5	175	87–2800	7–2½x10¼	Y	WG T9A	4	Cla R750	SF	H	** –6.3	Cla F450	L4IHV	283	....	A	TX	60	8½x3½x¼	T
54	.....404SCH		139	163	14700	4900	7.50/20D	8.25/20	Her CBJXE3	6–3½x4¼	245	6.5	175	87–2800	7–2½x10¼	Y	WG T9A	4	Eat A34-1350	SF	H	Dual Rge.	Cla F452	L4IHV	363	....	A	TX	60	8½x3½x¼	T
55	509		139	231	14700	5050	8.25/20D	8.25/20	Her CBJXC◆	6–3¾x4¼	282	6.5	207	99–2800	7–2½x10¼	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F450	L4IHV	363	....	A	TX	60	8½x3½x¼	T
56	.....509H		139	163	16200	5350	8.25/20D	9.00/20	Her CBJXD◆	6–4x4¼	320	6.5	240	113–3000	7–2½x10¼	Y	Cla 205V	5	Eat A3-16500	SF	H	Dual Rge.	Cla F450	L4IHV	363	....	A	TX	60	8½x3½x¼	T
57	.....509SC		106	175	14700	5050	8.25/20D	8.25/20	Her CBJXC◆	6–3¾x4¼	282	6.5	207	99–2800	7–2½x10¼	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F452	L4IHV	363	....	A	TX	60	8½x3½x¼	T
58	.....614H		139	201	18800	6300	9.00/20▲	9.00/20▲	Her CBJXD	6–4x4¼	320	6.5	240	113–3000	7–2½x10¼	Y	Cla 205V	5	Eat A36-18000	SF	H	Dual Rge.	Cla F450	L4IHV	481	....	A	TD	60	8½x3½x¼	T
59	703		130	190	23000	8600	10.00/20D	10.00/20	Cont T-6427	6–4⅞x4½	427	6.5	346	153–2600	7–2½x13½	Y	Cla 270V	5	Eat A2-18501	SF	R	Dual Rge	Tim 35100TW	Ws4IA	590	....	A	TD	60	10x3½x¼	T
60	809		130	190	28000	9000	10.00/20D	11.00/20	Con T-6427	6–4⅞x4½	427	6.5	346	153–2600	7–2½x13½	Y	Cla 270V	5	Tim R200P	2F	R	** –6.42	Tim 35100TW	Ws4IA	648	....	A	TD	60	10½x3½x⅛	T
61	901		142	208	30000	11000	10.00/22D	11.00/20	Con R-6572	6–4¼x5½	572	6.0	440	190–2600	7–3¼x14½	Y	Spi 6253–703	15	Tim U200P	2F	R	7.08–7.84	Tim 36021TW	Ws4IA	722	....	A	TD	90	10½x3½x⅛	T
62	(D)(T).....910		172	172	36000	12400	10.00/22D	10.00/22	Cum HB600	6–4⅞x6	672	17.5	500	150–1800	7–4½x16¾	Y	Spi 7851, 703	15	Tim U200P	2F	R	** –7.08	Tim 36021TW	Ws4IA	722	....	A	TD	90	10¼x3½x⅛	T
63	Dodge.....WC		116	....	4600		6.00/16S	6.50/16S	Own T-112	6–3¼x4⅛	217	6.8	172	95–3600	4–2¼x4.8	N	NP 36520	3	Own T112	HyS	H	3.73–4.78	Own T112	O4IH	174	264	Co	TX	40‡‡	6x2½x⅛	C
64	.....WD-15		120	....	5200		TA-15S	TA-15S	Own T-112	6–3¼x4⅛	217	6.8	172	95–3600	4–2¼x4.8	N	NP 36520	3	Own T114	HyS	H	3.73–4.78	Own T114	O4IH	183	276	Co	TX	44‡‡	6½x2½x⅛	C
65	.....WD-20		120	133	6400		6.00/20	6.00/20	Own T-116	6–3¼x4⅛	230	6.7	184	102–3600	4–2¼x4.8	N	NP 37520	3	Own T116	HyF	H	3.90–4.89	Own T116	O4IH	197	294	Co	TX	44‡‡	6½x2½x⅛	C
66	.....WF-21		135	160	9500		6.00/20S‡	6.50/20	Own T-118	6–3¼x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP 38750	4	Own T118	HyF	H	5.11–6.83	Own T118	O4IH	284	407	C	TX	60	7x2¼x.21	C
67	.....WF-31		135	200	13500		6.00/20S‡	7.50/20	Own T-118	6–3¼x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP 38750	4	Own T118	HyF	H	5.11–6.83	Own T118	O4IH	284	407	C	TX	60	7x2¼x.21	C
68	.....WFA-31		135	200	14000		6.00/20S‡	8.25/20	Own T-118	6–3¼x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP 38750	4	Eat A5-1350	SFd	H	Dual Rge.	Own T118	O4IH	284	407	C	TX	60	7x2¼x⅛	C
69	(c.o.e.).WFM-35		105	159	13500		6.00/20S‡	7.50/20	Own T-128	6–3¼x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP 38780	4	Own T128	HyF	H	5.11–6.83	Own T128	O4IH	284	407	C	TX	60	7x2¼x⅛	C
70	(c.o.e).WFMA-35		105	159	14000		6.00/20S‡	8.25/20	Own T-128	6–3¼x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP 38780	4	Eat A5-1350	SFd	H	Dual Rge.	Own T128	O4IH	284	407	C	TX	60	7x2¼x⅛	C
71	.....WG-40		136	220	15500		6.00/20D	8.25/20	Own T-120	6–3¼x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP 39240	5	Own T120	HyF	H	5.11–7.16	Own T120	O4IHV	359	503	C	TX	60‡‡	8½x2½x⅛	C
72	.....WGA-40		136	220	15500		6.00/20D	8.25/20	Own T-120	6–3¼x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP 39240	5	Eat A5-1350	SFd	H	Dual Rge.	Own T120	O4IHV	359	503	C	TX	60‡‡	8½x2½x⅛	C
73	.....WGAX-40		136	220	16000		8.25/20D*	8.25/20*	Own T-120	6–3¼x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP 39240	5	Eat 16500	SFd	H	Dual Rge.	Own T120	O4IHV	391	609	C	TX	60‡‡	8½x2½x⅛	C
74	(c.o.e.).WGM-40		105	159	16000		6.00/20D	8.25/20	Own T-130	6–3¼x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP 39290	5	Own T130	HyF	H	5.11–7.16	Own T130	O4IHV	359	503	C	TX	60	8½x2½x⅛	C
75	(coe).WGMA-40		105	159	16000		6.00/20D	8.25/20	Own T-130	6–3¼x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP 39290	5	Eat A5-1350	SFd	H	Dual Rge.	Own T130	O4IHV	359	503	C	TX	60	8½x2½x⅛	C
76	(coe)WGMAX-40		105	159	16500		8.25/20D*	8.25/20*	Own T-130	6–3¼x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP 39290	5	Eat 16500	SFd	H	Dual Rge.	Own T130	O4IHV	391	609	C	TX	60	8½x2½x⅛	C
77	.....WH-45		136	220	15500		6.50/20D	8.25/20	Own T-120	6–3¼x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP 39240	5	Own T120	HyF	H	5.11–7.16	Own T120	O4IHV	359	503	C	TX	60‡‡	8½x2½x⅛	C

● Includes cab. † Or Continental T-6371, 6–4⅛x4½ °—Rear-9.00/20, 10 ply. □ Chevrolet own rear axle (6.17:1) available at extra cost on Models PJ-PK-PL. Chevrolet own 2-speed rear axle (6.13-8.10:1) available at extra cost on Models PVS-PWS-PP-PR-PS-PV-PW-PX. ♦ Max. gross vehicle weight can only be obtained by adding regular production options (at extra cost). ▽ With Spi 703A with 3 forward speeds. ‡ Front only; Rear 6.50/20S ◆ Or CBJXB 6-3¾x4¼ ▲ Rear 7.00/16S ▲ Front only; rear 10.00/20D * Own Loadmaster engine available on models PJ-PK-PL at extra cost

(Turn to Page 96, Please)



Announcing the new Exide Batteries

Into these New Exides has gone the knowledge gained from war-time experience on tanks, trucks and other automotive equipment, in every type of service, in every climate throughout the world.

The New Exide Batteries are new throughout . . . new in design . . . new in construction . . . new in performance ability . . . with many notable features that assure better service, longer life, greater ease of maintenance and less cost per mile of operation.

A FEW OF THE MANY NEW FEATURES

- Heavy, over-size plates
- Greater capacity
- Self-cleaning, non-spitting vent plugs
- Double insulation
- "Bull's Eye" electrolyte leveling device
- Larger, heavier intercell connectors
- Positive cover seals
- Many others

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32

Exide Batteries of Canada, Limited, Toronto

(Continued from Page 94)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make	Location	Type Operat'n	Linings Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Dodge Cont'd.																																
1	WHA-45	.....	136	220	15500	.....	6.50/20D	8.25/20	Own T-120	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP 39240	5	Eat A5-1350	SFd	H	Dual Rge.	Own T120	O4IHV	359	503	C	TX	60‡‡	8 1/4 x2‡‡ x1/2	C
2	WHAX-45	.....	136	220	16000	.....	8.25/20D*	8.25/20*	Own T-120	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP 39240	5	Eat 16500	SFd	H	Dual Rge.	Own T120	O4IHV	391	609	C	TX	60‡‡	8 1/4 x2‡‡ x1/2	C
3	(c.o.e.) WHM-45	.....	105	159	16000	.....	6.50/20D	8.25/20	Own T-130	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP 39290	5	Own T130	HyF	H	5.11–7.16	Own T130	O4IHV	359	503	C	TX	60	8 1/4 x2‡‡ x1/2	C
4	(coe) WHMA-45	.....	105	159	16000	.....	6.50/20D	8.25/20	Own T-130	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP 39290	5	Eat A5-1350	SFd	H	Dual Rge.	Own T130	O4IHV	359	503	C	TX	60	8 1/4 x2‡‡ x1/2	C
5	(coe) WHMAX-45	.....	105	159	16500	.....	8.25/20D*	8.25/20*	Own T-130	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP 39290	5	Eat 16500	SFd	H	Dual Rge.	Own T130	O4IHV	391	609	C	TX	60	8 1/4 x2‡‡ x1/2	C
6	WJ-55	.....	136	235	18500	.....	7.50/20D	9.00/20	Own T-136	6–3 3/4 x4 1/4	281	6.5	225	115–3200	7–3x11.2	Y	NP 39460	5	TimH100DPH	HyF	H	6.80–7.20	Tim T136	T4IHV	396	609	C	TX	60‡‡	8 1/4 x2 1/2 x1/4	C
7	WJA-55	.....	136	235	18500	.....	7.50/20D	9.00/20	Own T-136	6–3 3/4 x4 1/4	281	6.5	225	115–3200	7–3x11.2	Y	NP 39460	5	TimH300DPH	HyF	H	Dual Rge.	Tim T136	T4IHV	396	609	C	TX	60‡‡	8 1/4 x2 1/2 x1/4	C
8	WK-65	.....	136	196	21000	.....	8.25/20D	10.00/20	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP 39440	5	Tim L100DPH	HyF	H	6.83–7.40	Ti 32500NX14	T4IHV	424	666	C	TX	60‡‡	8 1/4 x2 1/2 x1/4	P
9	WKA-65	.....	136	196	21000	.....	8.25/20D	10.00/20	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP 39440	5	Tim L300DPH	HyF	H	Dual Rge.	Ti 32500NX14	T4IHV	424	666	C	TX	60‡‡	8 1/4 x2 1/2 x1/4	C
10	WR-65	.....	136	196	23000	.....	10.0/20D*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP 39440	5	Tim 100DPH	HyF	H	6.83–7.80	Tim35020NX9	T4IHV	486	770	C	TX	60‡‡	8 1/4 x2 1/2 x1/4	P
11	WRA-65	.....	136	196	23000	.....	10.0/20D*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP 39440	5	Tim 300DPH	HyF	H	Dual Rge.	Tim35020NX9	T4IHV	486	770	C	TX	60‡‡	8 1/4 x2 1/2 x1/4	C
	Dodge (School Bus)																																
12	WF-32-S	.....	160	....	14500	.....	6.50/20D	7.50/20	Own T-118	6–3 1/2 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.0	N	NP 38750	4	Own T118	HyF	H	6.28–6.83	Own T118	O4IH	284	407	C	TX	.....	7x2 3/4 x.21	C
13	WF-34-S	.....	178	....	14500	.....	7.00/20D	7.50/20	Own T-118	6–3 1/2 x4 1/4	236	6.6	192	115–3200	4–2 1/2 x5.0	N	NP 38750	4	Own T118	HyF	H	6.28–6.83	Own T118	O4IHV	284	407	C	TX	.....	7 1/4 x2 1/2 x1/4	C
14	WF-36-S	.....	200	....	14500	.....	7.50/20D	7.50/20	Own T-118	6–3 1/2 x4 1/4	236	6.6	192	115–3200	4–2 1/2 x5.0	N	NP 38750	4	Own T118	HyF	H	6.28–6.83	Own T118	O4IHV	284	407	C	TX	.....	7 1/4 x2 1/2 x1/4	P
15	WH-40-S	.....	220	....	16000	.....	7.50/20D	8.25/20	Own T-120	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP 39240	5	Own T120	HyF	H	6.28–7.16	Own T120	O4IHV	359	503	C	TX	.....	8 1/4 x2 1/2 x1/4	P
16	WJ-59-S	.....	235	....	18500	.....	9.00/20D	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP 39460	5	TimH100DPH	HyF	H	6.8–7.2	Tim32525NX1	T4IHV	359	503	C	TX	.....	8 1/4 x2 1/2 x1/4	P
17	Duplex T	.....	136	220	18000	6600	8.25/20	9.00/20	Her JXD	6–4x4 1/4	320	6.2	240	113–3000	7–2 1/4 x10‡‡	Y	Fu 5B330	5	Tim H100	B	H	** –6.83	Tim 32502	L4IHV	420	654	A	TX	59	9 1/2 x3 1/2 x1/4	C
18	R	.....	136	220	25000	8820	9.00/20	10.00/20	Her WXLC-3	6–4 1/2 x4 3/4	404	5.8	312	139–2600	7–2 1/4 x13 1/4	Y	Fu 5A43	5	Tim 98415	DF	R	6.53–8.53	Tim 35000	L4IHV	730	1016	A	TX	79 1/4	9 1/2 x3 1/2 x1/4	C
19	JHA	.....	148	220	28000	9800	10.00/20D	11.00/20	Her RXB	6–4 1/2 x5 1/4	501	5.4	360	121–2200	7–3x14	Y	Fu 5A620	5	Tim Q300	2F	R	** –9.81	Tim 26450	Ws4IA	912	1311	A	TX	79	10 1/2 x3 1/2 x1/4	C
20	KHA	.....	148	220	32000	10500	11.00/20	11.00/20	Her RXC	6–4 3/4 x5 1/4	529	5.4	395	132–2300	7–3x14 1/4	Y	Fu 5A620	5	Tim U-200	2F	R	** –9.81	Tim 26450	Ws4IA	912	1311	A	TX	79	10 1/2 x3 1/2 x1/4	C
21	Federal 16M	.....	146	194	13500	4460	7.50/20D	.....	Her JXE	6–3 1/2 x4 1/4	245	6.5	180	87–3000	7–2 1/2 x10‡‡	N	WG T9	4	T 53547DPH	BF	H	** –5.66	Tim 30000HX	L4IHV	310	482	a	TX	67	8 1/4 x2 3/4 x1/4	T
22	18M	.....	146	194	15000	4700	8.25/20D	.....	Her JXBF	6–3 3/4 x4 1/4	263	6.5	189	93–3000	7–2 1/2 x10‡‡	N	WG T9	4	Tim 54412DP	SF	H	** –5.83	Tim 30003H	LT4IHV	314	532	a	TX	67	8 1/4 x2 1/2 x1/4 ‡	T
23	18M2	.....	146	194	15000	4830	8.25/20D	.....	Her JXBF	6–3 3/4 x4 1/4	263	6.5	189	93–3000	7–2 1/2 x10‡‡	N	WG T9	4	Tim 94440DP	dF	H	6.06–8.11	Tim 30003H	LT4IHV	314	532	a	TX	67	8 1/4 x2 1/2 x1/4 ‡	T
24	29M	.....	146	194	20000	5500	9.00/20D	.....	Her JXDF	6–4x4 1/4	320	6.5	246	102–2800	7–2 1/2 x10‡‡	N	Cla 205V	5	Tim 56410DP	SF	H	** –6.83	Tim 32514H	LT4IHV	390	654	a	TX	67	8 1/4 x2 1/2 x1/4 ‡	T
25	29M2	.....	146	194	20000	5690	9.00/20D	.....	Her JXDF	6–4x4 1/4	320	6.5	246	102–2800	7–2 1/2 x10‡‡	N	Cla 205V	5	Tim 96710DP	dF	H	6.07–8.12	Tim 32514H	LT4IHV	390	654	a	TX	67	8 1/4 x2 1/2 x1/4 ‡	T
26	29MA	.....	155	194	20000	5950	9.00/20D	.....	Her JXDF	6–4x4 1/4	320	6.5	246	102–2800	7–2 1/2 x10‡‡	N	Cla 205V†	15	Tim 58301DP	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8 1/4 x2 1/2 x1/4 ‡	T
27	45M	.....	143	203	24000	8005	10.00/22D	10.00/24	Con B6427	6–4 1/4 x4 1/4	427	6.4	332	133–2600	7–2 1/4 x13 1/2	Y	Cla 270VO	5	Tim 58301P	SF	R	** –6.83	Tim 35011TW	TW4IA	606	933	a	TD	60 1/2	10 1/2 x3 1/4 x1/4 ‡	T
28	45M2	.....	143	203	24000	8380	10.00/22D	10.00/24	Con B6427	6–4 1/4 x4 1/4	427	6.4	332	133–2600	7–2 1/4 x13 1/2	Y	Cla 270VO	dF	R	6.53–8.53	Tim 35011TW	TW4IA	606	933	a	TD	60 1/2	10 1/2 x3 1/4 x1/4 ‡	T
29	55M	.....	143	203	27000	8485	11.00/22D	11.00/24	Con B6427	6–4 1/4 x4 1/4	427	6.4	332	133–2600	7–2 1/4 x13 1/2	Y	Cla 270VO	5	Tim 8-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	60 1/2	10 1/2 x3 1/4 x1/4 ‡	T
30	55MA	.....	155	203	27000	8765	11.00/22D	11.00/24	Con B6427	6–4 1/4 x4 1/4	427	6.4	332	133–2600	7–2 1/4 x13 1/2	Y	Cla 270V†	15	Tim 8-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72 1/2	10 1/2 x3 1/4 x1/4 ‡	T
31	60MA	.....	155	203	28000	9600	11.00/22D	11.00/24	Con 22R	6–4 1/2 x5 1/4	501	5.4	384	148–2400	7–2 1/4 x14 1/2	Y	Fu 5A65▲	15	Tim 8200P	2F	R	** –7.08	Tim 36021TW	Tw4IA	722	1051	a	FX	72 1/2	10 1/2 x3 1/4 x1/4 ‡	T
32	60M2	.....	143	203	28000	9370	11.00/22D	11.00/24	Con 22R	6–4 1/2 x5 1/4	501	5.4	384	148–2400	7–2 1/4 x14 1/2	Y	Fu 5A650	5	Tim 8300P	HyF	R	6.53–8.53	Tim 36021TW	Tw4IA	722	1051	a	TX	60 1/2	10 1/2 x3 1/2 x1/4	T
33	65M2	.....	141	201	30000	9995	11.00/22D	11.00/24	Con R6602	6–4 1/2 x5 1/4	602	6.1	464	200–2600	7–3 1/4 x14 1/2	Y	Fu 5A650	5	Tim 8300P	HyF	R	6.53–8.53	Tim 36000TW	Ws4IA	722	1051	a	TX	60 1/2	10 1/2 x3 1/2 x1/4	T
34	65MA	.....	153	201	30000	10225	11.00/22D	11.00/24	Con R6602	6–4 1/4 x5 1/4	602	6.1	464	200–2600	7–3 1/4 x14 1/2	Y	Fu 5A65▲	15	Tim 8200P	HyF	R	** –7.08	Tim 36000TW	Ws4IA	722	1051	a	TX	72 1/2	10 1/2 x3 1/4 x1/4 ‡	T
	Ford																																
	Light Duty																																
35	Chs. Cowl..79C	$826	114	114	4700	$2276	6.50/16S	6.50/16S	Own 59C	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 21C	3	Own 21C	S½	H	** –3.78	Own 21C	O4IH	162	264	Co	21	40.06	5.92x2 1/2 x.15	T
36	Chs. Cowl..7GC	$768	114	114	4700	$2276	6.50/16S	6.50/16S	Own 5GC	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 2GC	3	Own 21C	S½	H	** –3.78	Own 21C	O4IH	162	264	Co	21	40.06	5.92x2 1/2 x.15	T
37	Chs. Cowl..79Y	$1002	122	122	6600	$2776	7.50/17S▼	7.50/17S▼	Own 59Y	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 51Y	4	Own 21Y	SF	H	** –4.85	Own 21Y	O4IH	187	308	Co	21	48.06	6x2 1/4 x.19	T
38	Chs. Cowl..7GY	$944	122	122	6600	$2776	7.50/17S▼	7.50/17S▼	Own 5GY	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 51Y	4	Own 21Y	SF	H	** –4.85	Own 21Y	O4IH	187	308	Co	21	48.06	6x2 1/4 x.19	T
	Heavy Duty Dump																																
39	Chs. Cowl..79U	$1180	134	134	12500	$3911	7.50/20D	7.50/20	Own 59T	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	60.06	7x2 1/4 x.21	LT
40	Chs. Cowl..7GU	$1122	134	134	12500	$3911	7.50/20D	7.50/20	Own 5GT	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 4GT	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	60.06	7x2 1/4 x.21	LT
	Heavy Duty Truck																																
41	Chs. Cowl..79T	$1174	134	134	12500	$3906	7.50/20D	7.50/20	Own 59T	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	60.06	7x2 1/4 x.21	LT
42	Chs. Cowl..7GT	$1116	134	134	12500	$3906	7.50/20D	7.50/20	Own 5GT	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 4GT	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	60.06	7x2 1/4 x.21	LT
43	Chs. Cowl..798T	$1210	158	158	12500	$3986	7.50/20D	7.50/20	Own 59T	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	84.06	7x2 1/4 x.21	LT
44	Chs. Cowl.7G8T	$1152	158	158	12500	$3986	7.50/20D	7.50/20	Own 5GT	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 4GT	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	84.06	7x2 1/4 x.21	LT
	Heavy Duty COE																																
45	Cab Chs...791W	$1491	101	101	13500	$4333	7.50/20D	7.50/20	Own 59W	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 01T	SF	H	** –6.66	Own 01W	O4IH	303	506	Co	TX	60.06	7x2 1/4 x.21	T
46	Cab Chs...79W	$1535	134	134	13500	$4468	7.50/20D	7.50/20	Own 59W	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 01T	SF	H	** –6.66	Own 01W]	O4IH	303	506	Co	TX	93.06	7x2 1/4 x.21	LT
47	Cab Chs..798W	$1571	158	158	13500	$4543	7.50/20	7.50/20	Own 59W	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 01T	SF	H	** –6.66	Own 01W	O4IH	303	506	Co	TX	117.1	7x2 1/4 x.21	LT
	Heavy Duty Dump																																
48	Chs. Cowl.79UH	$1467	134	134	14500	$4076	8.25/20▲	8.25/20▲	Own 59T	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01T	O4IHV	303	506	Co	TX	60.06	7x2 1/4 x.21	LT
49	Chs.Cowl.7GUH	$1409	134	134	14500	$4076	8.25/20▲	8.25/20▲	Own 5GT	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 4GT	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01T	O4IHV	303	506	Co	TX	60.06	7x2 1/4 x.21	LT
	Heavy Duty Truck																																
50	Chs. Cowl.79TH	$1462	134	134	14500	$4071	8.25/20▲	8.25/20▲	Own 59T	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01T	O4IHV	303	506	Co	TX	60.06	7x2 1/4 x.21	LT
51	Chs.Cowl.7GTH	$1404	134	134	14500	$4071	8.25/20▲	8.25/20▲	Own 5GT	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 4GT	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01T	O4IHV	303	506	Co	TX	60.06	7x2 1/4 x.21	LT
52	Chs.Cowl.798TH	$1498	158	158	14500	$4151	8.25/20▲	8.25/20▲	Own 59T	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01T	O4IHV	303	506	Co	TX	84.06	7x2 1/4 x.21	LT
53	Chs.Cowl.7G8TH	$1440	158	158	14500	$4151	8.25/20▲	8.25/20▲	Own 5GT	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 4GT	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01T	O4IHV	303	506	Co	TX	84.06	7x2 1/4 x.21	LT
	Heavy Duty COE																																
54	Cab Chs.791WH	$1779	101	101	15000	$4498	8.25/20▲	8.25/20▲	Own 59W	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01W	O4IHV	303	506	Co	TX	60.06	7x2 1/4 x.21	T
55	Cab Chs. .79WH	$1823	134	134	15000	$4633	8.25/20▲	8.25/20▲	Own 59W	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01W	O4IHV	303	506	Co	TX	93.06	7x2 1/4 x.21	LT
56	Cab Chs.798WH	$1859	158	158	15000	$4708	8.25/20▲	8.25/20▲	Own 59W	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 59T-M■	SFD	H	5.83–8.11	Own 01W	O4IHV	303	506	Co	TX	117.1	7x2 1/4 x.21	LT
	School Bus																																
57	Cowl Chs.,.798T	$1260	158	158	13500	$3970	7.50/20D	7.50/20	Own 59T	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	.....	7x2 1/4 x.21	T
58	Cowl Chs..7G8T	$1202	158	158	13500	$3970	7.50/20D	7.50/20	Own 5GT	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 4GT	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	.....	7x2 1/4 x.21	T
59	Cowl Chs.,.794T	$1353	194	194	14500	$4140	7.50/20D	7.50/20	Own 59T	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.96	N	Own 41T	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	.....	7x2 1/4 x.21	LT
60	Cowl Chs..7G4T	$1295	194	194	14500	$4140	7.50/20D	7.50/20	Own 5GT	6–3.3x4.4	226	6.7	180	90–3300	4–2 1/2 x4.88	N	Own 4GT	4	Own 01T	SF	H	** –6.66	Own 01T	O4IH	303	506	Co	TX	.....	7x2 1/4 x.21	LT
61	Hudson (¼T. Pkp)	.....	128	128	4810	.....	6.50/16-6	6.50/16-6	Own 58	6–3x5	212	6.5	168	102–4000	3– ▲▲	N	Own	3	Own	S½	H	** –4.55	Own	B4IH	141	242	C	2I	42½	7½x1 1/4 x1/4	B
62	Intern'l (2)...KB-1	800	113	125	4400	2190	6.00/16-4	7.00/16	Own GRD214	6–3 1/4 x4 1/2	213	6.3	160	82–3400	4–2 1/4 x6‡‡	N	Own HD8-B	3	Own R1050	S½	H	3.72–5.11	Own F50	L4IH	164	316	c	FX	38	6x2 1/4 x1/4	C
63	KB-1M	755	102	113	4600	2090	6.00/16-4	6.50/16-6	Own GRD214	6–3 1/4 x4 1/2	213	6.3	160	82–3400	4–2 1/4 x6‡‡	N	O SA-HD8-B	3	Own R1050	S½	H	3.72–5.11	Own F150	L4IH	164	316	c	FX	.....	6 1/2 x2 1/4 x1/4 ‡‡	C
64	KB-2	840	125	125	5200	2225	6.00/16-4	7.00/16-6	Own GRD214	6–3 1/4 x4 1/2	213	6.3	160	82–3400	4–2 1/4 x6‡‡	N	Own HD8-B	3	Own R1050	S½	H	3.72–5.11	Own F50	L4IH	164	316	c	FX	50	6 1/2 x2 1/4 x1/4 ‡‡	C
65	KB-3	980	130	....	6650	2970	7.00/16-6	7.50/16-6	Own GRD214	6–3 1/4 x4 1/2	213	6.3	160	82–3400	4–2 1/4 x6‡‡	N	Own HD8-B	3	Own R1150	SF	H	4.22–5.28	Own F150	L4IH	195	367	c	FX	55	6 1/2 x2 1/4 x1/4 ‡‡	C
66	KB-3M	905	102	113	7000	2525	7.00/16-6	7.50/16-8	Own GRD214	6–3 1/4 x4 1/2	213	6.3	160	82–3400	4–2 1/4 x6‡‡	N	Own H41B	4	Own R1150	SF	H	4.22–5.28	Own F150	L4IH	221	367	c	TX	.....	6 1/2 x2 1/4 x1/4 ‡‡	C

(Turn to Page 98, Please)

• Rear 11.00/20D.
• For shorter wheel bases—10x3 1/4 x 1/4.
▲ Auxiliary trans. Spicer 703F, three forward speeds.
♦ List price of vehicle to nearest dollar.
▼ Rear Only; Front 7.00/17.
▲▲ Diameter front 2.343, Center 2.375, Rear 2.406. Total length 5.750.
♦ Weight of complete vehicle with 5 gal. of gas.
▲ Rear Only; Front 7.50/20.
† Auxiliary trans. Spicer 6231B, three forward speeds.
■ Two speed rear axle with vacuum shift and power braking.
‡ For shorter wheel bases 8 1/4 x2 1/4 x7/32.
• Rear 9.00/20, 10 ply.



WHEN THIS WHEEL SPINS... *it costs somebody money!*

But someone has a chance to win.

When truck wheels spin, however, *nobody* wins. There's excessive wear on tires, axle and differential parts. If the truck is stalled, you waste time and have to pay towing charges. Costs mount up fast that way!

You don't need to waste this money when you can *save* with a NoSpin Differential. It prevents wheel-spin because it's automatic-locking.

The NoSpin Differential gives full driving power to both rear wheels. Even if one wheel loses some traction, the remaining traction—plus all that of the opposite wheel—is available to move the truck. That's because both wheels must rotate when power is applied.

NoSpin Differentials are available for most makes of trucks. Thousands of satisfied owners the country over use and recommend them.

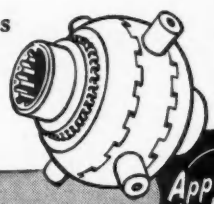
So DON'T GAMBLE WITH WHEEL-SPIN! With NoSpin Differentials you will effect savings in time and money you never before thought possible. For complete information, call your local Truckstell distributor today. Or write The Truckstell Company, Union Commerce Building, Cleveland 14, Ohio.



"NOW WE TOW CARS WITHOUT CHAINS."

—says Carl S. Peterson, President Zorn Auto Company, Osceola, Wis.

"We installed a locking differential on our tow truck and have had a good chance to try it out with heavy snow and icy roads. There is quite a grade in front of our building, and it was always difficult to tow a heavy truck when the pavement was icy. Now we pull them in without any trouble and *without chains*. We also have towed in several cars and trucks on side roads that hadn't been cleared, which we never would have attempted before."



NoSpin DIFFERENTIAL

Mfd. by DETROIT AUTOMOTIVE PRODUCTS CORP.
(Formerly Thornton Tandem Co.)
DETROIT, MICHIGAN

Approved AND DISTRIBUTED BY **TRUCKSTELL**
SPECIALIZED EQUIPMENT FOR PLUS PERFORMANCE

(Continued from Page 96)

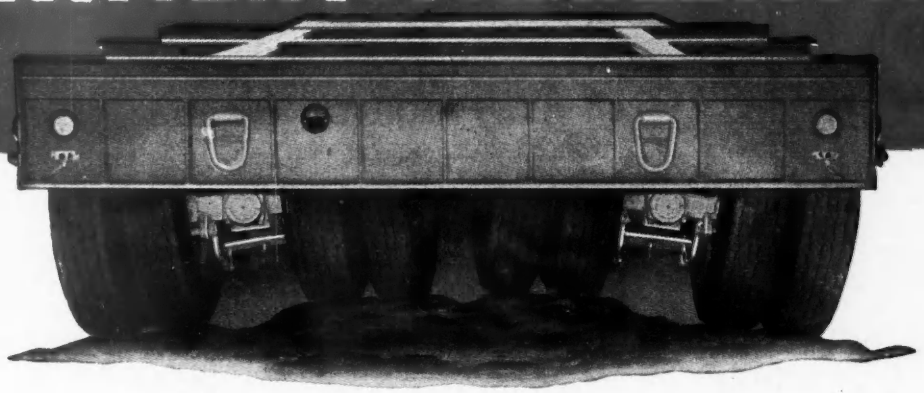
Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Matched Tired Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Intern'l Cont'd																														
1	(a) KB-5	1130	135	177	13500	3630	6.50/20D	8.25/20	O-GRD 233	6–3⅞x4½	233	6.3	181	93–3400	4–2½x6‡‡	N	Own H41B	4	Own R1360	SF	H	5.28–7.16	Own F350	LH4IH	294	509	c	TX	60	8x3x⅞	T
2	(a) KB-6	1625	134	176	14500	4530	7.00/20D	8.25/20	Own BLD250	6–3⅞x4½	251	6.3	200	100–3200	4–2½x5‡‡	N	Own WT97A	5	Own R1450	SF	H	5.62–7.16	Own F470	LH4IHV	305	539	c	TX	60	8¼x3x⅞	T
3	(a) KB-7	2075	134	176	16500	4960	7.50/20D	9.00/20	O-BLD 269	6–3⅞x4½	269	6.3	222	100–3000	4–2.7x5‡‡	N	Own F51	5	Own R1560	SF	H	6.50–7.16	Own F470	LH4IHV	368	633	c	TX	60	8¼x3½x⅞	T
4	(a) KB-8	3150	137	197	20000	6485	9.00/20D	10.00/20	O-RED 361	6–4⅛x4½	361	6.3	252	126–3000	7–3¼x10‡‡	Y	Own F51	5	Own R1572	SF	H	6.43–8.51	Own F553	LH4IHV	407	709	c	PX	60	8‡‡x3½x⅞	T
5	(a) KB-10	4000	149	197	22500	7310	10.00/20D	11.00/20	Own RED401	6–4¼x5	401	6.3	318	140–2800	7–3¼x10‡‡	Y	Own F52	5	Own R1676	SF	H	6.43–8.05	Own F653	LH4IHV	484	829	c	FX	72	9½x3½x⅛	T
6	(a) KBR-11	5500	149	197	27000	8335	10.00/20D	12.00/20	O-RED 450	6–4¼x5½	450	6.3	360	148–2600	7–3¼x10‡‡	Y	Own F54	5	Tim 8200P	28F	H	6.42–8.05	Own F750	WW4IA	616	1030	G	PX	72	10x3½x⅛	T
7	KBR-12	6750	155	179	28500	9950	11.00/20	12.00/20	O-Con. R6596	6–4¼x5½	586	6.0	475	200–2600	7–3¼x13	Y	Own F55	5	Tim 8200P	2F	H	** –6.42	Own F750	BW4IA	746	....	GS	FX	66	10x3½x⅛	C
8	W-3042-H		179	227	30000	12140	10.00/20	11.00/22	O-Con. S6749	6–5½x5½	749	6.0	554	254–2600	7–3¾x15¾	Y	Spl 7741	4	Tim 8200P	2F	H	** –6.42	Own 86303	BW4IA	690	....	G	TX	84	10x3½x⅛	C
9	Kenworth(D) 521		161	215	35000	12200	10.00/20	11.00/22	Cum HB6	6–4⅛x6	672	17.	500	200–2100	7–4½x16½	Y	BL 7841	4	Tim U200P	DR	H	6.42–7.84	Tim 36000TW	Ws4IA	752	1050	a	TD	72	9¼x3½x⅛	C
10	(D) 522		187	245	43000	12900	10.00/20	11.00/22	Cum HB6	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	BL 7841	4	Tim U200P	....	....	.....	Tim 36000TW	Ws4IA	1135	....	....	....	....	9½x3¼x⅛	....
11	587		150	215	30000	10130	10.00/20	11.00/22	Bu LO525	6–4½x5½	525	5.5	385	135–2200	7–3x11½	Y	Fu 5A620	5	Tim U200P	....	....	.....	Tim 35100TW	Ws4IA	752	....	....	....	....	9½x3¼x⅛	....
12	Mar. Her. DVL-1		90	118	8200	4200	7.50/16S	8.25/18S	Willys MB	4–3⅛x4½	134	6.4	105	60–4000	3–2.33x5.48	Y	Own	3	(Front Drive)	.....	....	7.10	Own	4IH	202	3.7	M2	....	.....	None	....
13	Reo 19A		125	125	14000	5395	8.25/20	8.25/20	Own GC245	6–3½x4¼	245	6.2	191	89–3100	7–2½x10.6	Y	WG T9	4	Tim 53547	SB	H	** –6.16	Tim 30000	L4IHDp	318	....	c	TX	64½	8¼x2‡‡x⅛	T
14	19AT		125	125	18000	5425	8.25/20	8.25/20	Own GC 245	6–3½x4¼	245	6.2	191	89–3100	7–2½x10.6	Y	WG T9	4	Tim 93000	2S	H	6.03–8.00	Tim 30000	L4IHDp	318	....	c	TX	64½	8¼x2‡‡x⅛	T
15	19B		145	145	14000	5240	8.25/20	8.25/20	Own GC245	6–3½x4¼	245	6.2	191	89–3100	7–2½x10.6	Y	WG T9	5	Tim 93000	2S	H	6.03–8.00	Tim 30000	L4IHDp	318	....	c	TX	84½	8¼x2‡‡x⅛	T
16	21T		130	130	30000	5996	9.00/20	9.00/20	Own GC288	6–3½x5	288	6.2	221	94–3000	7–2½x10.6	Y	Cla 205V	5	Tim 95000	2S	H	6.08–8.12	Tim 31107	L4IHDp	350	....	c	TX	69½	9x3x⅛	T
17	21B		145	145	18000	6116	9.00/20	9.00/20	Own GC288	6–3½x5	288	6.2	221	94–3000	7–2½x10.6	Y	Cla 205V	5	Tim 95000	2S	H	6.08–8.12	Tim 31107	L4IHDp	350	....	c	TX	84½	9x3x⅛	T
18	22T		130	130	34000	6877	9.00/20	9.00/20	Own GC310	6–3¾x5	310	6.2	241	101–3000	7–2½x10.6	Y	Cla 205V	5	Tim 96710	2S	H	6.08–8.12	Tim 31107	L4IHDp	350	....	c	TX	69½	9¼x3⅓x⅛	T
19	22B		145	145	20500	7063	9.00/20	9.00/20	Own GC310	6–3¾x5	310	6.2	241	101–3000	7–2½x10.6	Y	Cla 205V	5	Tim 76410	DR	H	** –7.35	Tim 31107	L4IHDp	350	....	c	TX	84½	9¼x3⅓x⅛	T
20	23T		130	130	42000	7763	10.00/20	10.00/20	Cont B6.371	6–4¼x4½	371	5.7	280	100–2650	7–2½x13.5	Y	Cla 270VO	5	Tim 98415	2S	H	6.53–8.53	Tim 32521	Ws4IA	586	....	c	TX	69½	9¼x3⅓x⅛	T
21	23B		145	145	23000	7895	10.00/20	10.00/20	Cont B6.371	6–4¼x4½	371	5.7	280	100–2650	7–2½x13.5	Y	Cla 270VO	5	Tim 72300	DR	H	** –8.4	Tim 32521	L4IHDp	480	....	c	TX	84½	9¼x3⅓x⅛	T
22	25T		130	130	47000	8423	10.00/20	10.00/20	Cont B6427	6–4⅞x4⅛	427	6.1	324	127–2600	7–2½x13.5	Y	Cla 270VO	5	Tim 98415	2S	H	6.53–8.53	Tim 35000	Ws4IA	618	....	c	TX	69½	9¼x3⅓x⅛	T
23	25B		145	145	27400	8555	10.00/20	10.00/20	Cont B6427	6–4⅞x4⅛	427	6.1	324	127–2600	7–2½x13.5	Y	Cla 270VO	5	Spl 200P	DR	H	** –7.84	Tim 35000	Ws4IA	618	....	c	TX	84½	9¼x3⅓x⅛	T
24	Sterling HD97		148	175	24000	9150	9.00/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2½x12½	Y	Fu 5A43	5	Tim Q100DPH	FHy	R	5.29–7.80	Tim 35011H	T4IHV	466	822	A	TX	67	9x7x¼	A
25	HD105		148	175	24000	9550	10.00/20	11.00/22	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2½x12½	Y	Fu 5A43	5	Tim R100DPH	FHy	R	5.29–7.40	Tim 35011H	T4IHV	524	926	A	TX	67	9x3¼x¼	A
26	HD115		148	175	32000	10650	10.00/20	11.00/24	Wau 6SRKR	6–4⅛x5½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62	5	Tim 8200P	2F	R	7.77–8.53	Tim 36000TW	Ws4IA	722	1054	A	TX	67	9x3¼x¼	A
27	HD145		148	175	36000	11250	11.00/20	12.00/24	Wau 6SRKR	6–4⅛x5½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62	5	Tim 79721W	2F	R	7.69–11.36	Tim 36000TW	Ws4IA	614	922	A	TX	67	9¼x3⅛x3⅛x⅛	A
28	(D) HD115H		158	185	32000	11950	10.00/20	10.00/24	Cum HB600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86	4	Tim 8200P	2F	R	7.77–8.53	Tim 36000TW	Ws4IA	722	1054	A	TX	68	9x3¼x¼	A
29	(D) HD145H		158	185	36000	12550	11.00/20	12.00/24	Cum HB600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86	4	Tim 79721W	2F	R	7.69–11.36	Tim 36000TW	Ws4IA	614	922	A	TX	68	9¼x3⅛x3⅛x⅛	A
30	HC97		148	175	24000	9200	9.00/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2½x12½	Y	Fu 5A43	5	Own 97H	CS	R	6.70–10.82	Tim 35011H	T4IHV	540	842	A	TX	67	9x7x¼	A
31	HC105		148	175	28000	9700	10.00/20	11.00/22	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2½x12½	Y	Fu 5A43‡	15	Own 137H	CS	R	6.70–10.82	Tim 35011H	TL4IHV	540	842	A	TX	67	9x3¼x¼	A
32	HC115		148	175	32000	10350	10.00/20	11.00/24	Wau 6SRKR	6–4⅛x5½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62‡	15	Own 137W	CS	R	6.70–10.82	Tim 36000TW	Ws4IA	648	974	A	TX	67	9x3¼x¼	A
33	HC144		148	175	36000	11250	10.00/22	12.00/24	Wau 6SRKR	6–4⅛x5½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62‡	15	Own 148W	CS	R	6.70–10.82	Tim 36000TW	Ws4IA	708	1042	A	TX	67	9¼x3⅛x3⅛x⅛	A
34	HC147		148	175	36004	11500	10.00/22	12.00/24	Wau 6SRKR	6–4⅛x5½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62‡	15	Own 147W	CS	R	6.70–10.82	Tim 36000TW	Ws4IA	708	1042	A	TX	67	9¼x3⅛x3⅛x⅛	A
35	HC175		158	185	45000	14600	12.00/24†	14.00/24‡	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86•	12	Own 175W	CS	R	7.31–12.42	Tim 27454W	Ws4IA	786	1152	A	TX	68	9¼x3⅛x2⅛	A
36	HC250		158	185	60000	18400	14.00/24‡	14.00/24‡	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86•	12	Own 251W	CS	R	7.31–12.42	Tim 27454W	Ws4IA	786	1157	A	TX	68	12x3½x3⅝	AL
37	(D) HC115H		158	185	32000	12250	10.00/20	11.00/24	Cum HB600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86•	12	Own 137W	CS	R	6.70–10.82	Tim 36000TW	Ws4IA	648	974	A	TX	68	9x3¼x¼	A
38	(D) HC175H		158	185	45000	14930	12.00/24†	14.00/24‡	Cum HBD600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86•	12	Own 175W	CS	R	7.31–12.42	Tim 27454W	Ws4IA	786	1152	A	TX	68	9¼x3⅛x3⅛x⅛	A
39	(D) HC250H		158	185	60000	18700	14.00/24‡	14.00/24‡	Cum HBD600	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86•	12	Own 251W	CS	R	7.31–12.42	Tim 27454W	Ws4IA	786	1152	A	TX	68	12x3½x3⅝	AL
40	Studebaker M5		113	113	4500	2120	6.50/16S	6.50/16S	Own 1M	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 664949	3	Own 663597	Hy	H	** –4.82	Own 664307	L4IH	157	276	Co	2I	45‡‡	7⅛x2½x⅛	T
41	M15A-20		120	120	7800	2960	7.00/17S	7.50/17	Own 2M	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 673674	4	Own 664435	SF	H	5.66–6.60	Own 673625	LH4IH	216	342	a	TX	52‡‡	7‡‡x2‡‡x⅛	T
42	M15A-28		128	128	10000	3060	7.50/17S	7.00/20	Own 2M	6–3x4	170	6.5	134	80–4000	4–2⅛x5‡‡	N	Own 673674	4	Own 665174	SF	H	5.66–6.66	Own 673625	LH4IH	216	342	a	TX	60‡‡	8‡‡x2‡‡x⅛	T
43	M16		128	195	13500	3630	7.00/20D	8.25/20	Own 3M	6–3⅞x4½	226	6.5	176	94–3600	4–2½x5‡‡	Y	Own 674989	4	Own 665171	SF	H	5.66–6.66	Own 664452	LH4IH	280	442	Co	TX	60‡‡	8‡‡x2‡‡x⅛	T
44	M16(2-Sp)		128	195	15000	4090	7.00/20D	8.25/20	Own 3M	6–3⅞x4½	226	6.5	176	94–3600	4–2½x5‡‡	Y	Own 674989	4	Own 674681	SF	H	Dual Rge.	Own 664452	LH4IH	280	442	Co	TX	60‡‡	8‡‡x2‡‡x⅛	T
45	Truckstell(C) F18-5		140	194	18500	▲5265	7.50/20•	10.00/20	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford & BL	12	Cla R1300	SF	H	5.67–6.83	Ford	L4IHV	355	610	a	TX	65¾	7½x3x.47	CTf
46	(C) F19-5-0		108	166	19500	▲5265	7.50/20•	10.00/20	Ford	8–3⅞x3¾	239	6.7	180	100–3800	3–2½x4.71	N	Ford & BL	12	Cla R1300	SF	H	5.67–6.83	Ford	L4IHV	355	610	a	TX	65¾	7½x3x.47	CTf
47	(C) C18-5		144	197	18500	▲5395	7.50/20•	9.00/20	Chevrolet	6–3⅞x3‡‡	235	6.6	192	93–3100	4–2¾x5½	N	Chev & BL	12	Cla R1300	SF	H	5.67–6.83	Chevrolet	L4IHV	355	610	a	TD	67	7½x3x.47	CTf
48	(C) C19-5-0		114	173	19500	▲5395	7.50/20•	9.00/20	Chevrolet	6–3⅞x3‡‡	235	6.6	192	93–3100	4–2¾x5½	N	Chev & BL	12	Cla R1300	SF	H	5.67–6.83	Chevrolet	L4IHV	355	610	a	TD	67	7½x3x.47	CTf
49	Ward La Fr. D-1		149	220	25000	9500	10.00/20	11.00/20	Con B6427	6–4⅛x4⅞	427	6.1	325	127–....	7–2⅞x13½	Y	Fu 5A430	5	Tim 58415PA	B	R	** –6.14	Tim 35011TW	Ws4A	600	928	c	TM	68¼	9½x3x⅛	....
50	D-1B		149	220	25000	9500	10.00/20	11.00/20	Con 22R	6–4½x5¼	501	5.4	384	148–....	7–2¾x14½	Y	Fu 5A620	5	Tim 58415PA	B	R	** –6.14	Tim 35011TW	Ws4A	600	928	c	TM	68¼	9½x3x⅛	....
51	D-1C		149	220	29000	9500	11.00/20	11.00/24	Con B6427	6–4⅛x4⅞	427	6.1	325	127–....	7–2⅞x13½	Y	Fu 5A430	5	Tim 8-200P	S2	R	** –7.84	Tim 35011TW	Ws4A	673	1031	c	TM	68¼	10x3x⅛	....
52	D-2		149	220	29000	12000	11.00/20	11.00/24	Con R6513	6–4½x5⅝	513	5.9	400	170–....	7–3¼x14½	Y	Fu 5A620	5	Tim 8-200P	S2	R	** –7.84	Tim 35011TW	Ws4A	673	1031	c	TM	68¼	10x3x⅛	....
53	D-3		149	220	34000	12000	11.00/22	12.00/24	Con R6572	6–4½x5⅝	572	5.9	440	189–....	7–3¼x14½	Y	Fu 5A650	5	Tim U200P	S2	R	** –7.84	Tim 26458W	Ws4A	750	1159	c	TM	68¼	10x3x⅛	....
54	(D) D-5		149	149	35000	12500	11.00/22	12.00/24	Cum HB600	6–4⅛x6	672	17.	500	150–....	7–4½x16¾	Y	Fu 5A650	5	Tim U200P	S2	R	** –6.42	Tim 26458W	Ws4A	750	1159	c	TM	68¼	10x3x⅛	....
	Four-Wheel-Drive																														
55	Corbitt 22FG		159	Opt	22000	.....	9.00/20	10.00/20	Con B6371	6–4⅛x4½	371	5.7	280	100–2600	7–2⅞x13½	Y	Fu 5A43	5	Tim R2090H	2F	H	** –8.43	Tim F2090H	L4IHV	....	868	a	TD	74	9x3x¼	T
56	Dodge WDX		126	126	8700	.....	7.50/16S	9.00/16S	Own T-137	6–3¼x4½	230	6.7	185	94–3200	4–2½x4.8	Y	NP 38580	4	Own T137	HyF	H	4.89–5.83	Own T137	O4IH	210	311	Co	TX	52‡‡	6½x2⅛x⅛	DL
57	FWD HA		132	156	17000	▲7470	8.25/20D	10.00/20	Wau BZ	6–4x4¼	320	5.9	223	95–2800	7–2¼x10¼	Y	Own H	5	Own H	SF	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
58	HR		132	154	20000	▲8000	9.00/20	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	291	129–2800	7–2½x12½	Y	Own H	5	Own H	8F	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
59	HG		154	154	20000	▲8050	9.00/20	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	291	129–2800	7–2½x12½	Y	Own H	5	Own H	8F	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	89¾	7⅛x3x⅛	C
60	8U		150	182	25000	▲10420	11.00/20D	12.00/20	Wau 8RKR	6–4½x5½	517	5.5	365	126–2400	7–3x13¾	Y	Own U	5	Own U	BF	H	6.7 –9.8	Own U	L4IHV	512	867	a	T4	90	7⅛x3x⅛	C
61	8U‡		150	182	28000	10570	11.00/20D	12.00/20	Wau 8RKR	6–4½x5½	517	5.5	365	126–2400	7–3x13½	Y	Own U	5	Own U	BF	H	6.7 –9.8	Own U	L4IHV	512	867	a	T4	90	7⅛x3x⅛	C
62	M7		150	180	38600	▲15400	12.00/20D	12.00/20	Wau 145GK	6–5¼x6	779	6.2	585	186–2000	7–3½x17¾	Y	Own M	10	Tim 1758	2F	H	** –7.33	Wis F409	Ws4IA	578	976	a	T4	90	10⅛x3x‡‡	C
63	(D) M7D		150	180	38600	▲15700	12.00/20D	12.00/20	Cum HB600	6–4⅛x6	672	17.	500	150–1800	7–4½x16¼	Y	Own M	10	Tim 1758	2F	H	** –7.33	Wis F409	Ws4IA	578	976	a	T4	90	10⅛x3x‡‡	C
64	(D) M10D		150	180	44000	16200	11.00/24D	12.00/24	Cum NHB600	6–5½x6	743	17.	575	200–2000	7–4½x16¼	Y	Own M	10	Tim 79721	2F	H	** –7.5	Wis F409	Ws4IA	596	1030	a	T4	90	10⅛x3x‡‡	C
65	Marmon-MH440-4		158	170	20700	▲8700	9.00/20D	10.00/20	Her WXLC3	6–4⅛x4¼	404	5.4	293	118–2800	7–2½x13½	Y	Fu 5A430	5	Tim R2090W	2B	H	** –8.43	Tim F2090W	W....A	584	887	c	F	72	9‡‡x3x¼	T
66	Herr. MH555-4		161	173	24000	▲10200	10.00/20D	11.00/20	Her RXC	6–4½x5¼	529	6.3	390	131–2200	7–3x13¼	Y	Fu 5A620	5	Tim R3100W	2B	H	** –8.15	Tim F3100W	F....A	692	1039	c	F	72	10⅛x3x⅛	T
67	(C) CM5-4		134	134	13500	▲4847	7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Ford	S	H	** –6.67	Own M5	F....H	302	563	a	F	60⅛	7x2¼x⅛	T
68	(C) CM6-4		158	158	13500	▲4973	7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Ford	S	H	** –6.67	Own M5	F....H	303	563	a	F	84⅛	7x2¼x⅛	T
69	(C) LD6P-4		114	....	....	....	15•	15•	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Ford	S	T	** –4.11	Own O	F....H	162	....	A	F	....	.....	X
70	(C) LD6-4		114	....	4700	▲2719	15•	15•	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Ford	S	H	** –4.11	Own O	F....H	162	....	A	F	40⅛	5‡‡x2¼x⅛	T
71	(C) OT5-4		122	....	6800	▲3972	7.50/17	7.50/17	Ford	8–3⅛x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Ford	S	H	** –4.86	Own I	F....H	186	....	A	F	48	6x2¼x⅛	T

(Turn to Page 100, Please)

▲ Includes Cab.
† Rear only; Front 11.00/24.
‡ Rear only; Front 12.00/24.
• Front only; Rear 8.25/20.
§ Auxiliary transmission, Own OJ.
♦ Auxiliary transmission Own FJ.

Another Item in the "SHULER AXLE" LINE—

MACHINERY TRAILER AXLES



Since 1915

- One-Piece Tubular Trailer Axles
- One-Piece Square Trailer Axles
- One-Piece House Trailer Axles
- Heavy-Duty Truck Front Axles
- Heavy-Duty Machinery Front Axles
- 2" Square Front-Steer Trailing Axles
- Heavy-Duty Machinery Trailer Axles
- Heavy-Duty Brakes, Mechanical, Vacuum or Air
- Miscellaneous Forgings for Heavy-Duty Trucks and Trailers

HEAVY equipment and machinery trailer users find these trunnion-mounted Shuler ONE-PIECE tubular axles the answer to their requirements for low-bed trailers carrying and moving their equipment from job to job over all kinds of highway and "off the road" conditions. The compact design of this Shuler trunnion permits two axles (8 wheels) to be mounted in a row across the rear of the trailer with each axle acting independent of the other. Regularly produced in capacities ranging from 11,000 to 25,000 lbs. per axle. Although generally furnished with heavy duty 12¼ x 5 Shuler brakes and hubs permitting the use of 15" dual disc wheels, these axles can also be furnished with brakes for larger diameter wheels where desired. Hubs and drums are omitted when cast wheels are used.

In addition to trunnion-mounted machinery trailer axles illustrated above, Shuler also manufactures highest-quality one-piece heavy-duty tubular and square trailer axles, front axles, light-weight house-trailer and cross-steer front axles, heavy-duty brakes, and a long line of automotive forgings such as king pins, lunette eyes, radius rods, spring seats, etc. *Write* for the complete Shuler Catalog, and prices.

SHULER AXLE CO., *Incorporated,* **Louisville, Ky.**
Detroit Office: **8424 Woodward Ave.**
Export Division: **38 Pearl St., New York, N. Y.**
West Coast Warehouse: **1280 Forty-Fifth St., Oakland, Cal.**

(Turn to Page 100, Please)

(Continued from Page 98)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	ENGINE DETAILS No. of Cylinders, Bore and Stroke	ENGINE DETAILS Displacement	ENGINE DETAILS Comp. Ratio	ENGINE DETAILS Torque lb. ft.	ENGINE DETAILS Max. Brake H.P. at R.P.M. Given	ENGINE DETAILS Main Bearings Number, Diameter and Length	ENGINE DETAILS Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES SERVICE Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Oshkosh....W1700	.....	150	205	28000	11000	11.00/20D	12.00/20S	Her RXC	6-4½x5½	529	5.4	380	128–2200	7–3x13¼	Y	Fu 5A620	5	Own W1700	2F	H	** –6.4	Own 1700	L4IH	630	975	G	TX	82	8¼x3x3½	TF
2	.....W2200	.....	160	181	40000	16500	13.00/20D	14.00/20S	Bu MO779	6–5¼x6	779	...	575	188–2100	7–3¾x17 -	Y	Fu 4A86	12	Own W2200	2F	H	** –6.14	Own 2200	LT4IA	645	975	G	TX	90	10½x3½x3½	TF
3	.....W2201	.....	160	181	40000	16500	13.00/20D	14.00/20S	Bu MO893	6–5½x6	893	...	625	200–1800	7–3¾x17	Y	Fu 4A86	12	Own W2200	2F	H	** –6.14	Own 2200	LT4IA	645	975	G	TX	90	10½x3½x3½	TF
4	Peterbilt(D)270DD	10332	165	Opt	27000	12500	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 7741	12	U-200P	2F	R	** –6.42	Tim 36000W	Ws4IA	800	1250	a	FD	80½	10½x3‡x⅄	TL
5	Walter(c.f.)....FN	.....	126	150	20000	7500	9.00/20D	10.00/20S	Wau MZR	6–4¼x4¾	404	5.6	290	100–2500	7–2⅝x12½	Y	Own FN	6	Own FNB	2	H	6.0–8.0	Own FN	O4IA	470	670	G	FI	84	7x2¾x1¼	C
6	(c.f.)...FZM	.....	126	150	24000	8500	10.00/20D	12.00/20S	Wau MZR	6–4¼x4¾	404	5.6	290	100–2500	7–2¾x12½	Y	Own FN	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x1½	B
7	(c.f.)...FKM	.....	126	150	24000	9000	10.00/20D	12.00/20S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13¼	Y	Own FJD	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x1½	B
8	(c.f.)...FCK	.....	126	138	30000	10500	10.00/24D	11.00/24S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13¼	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FC	O4IA	585	890	D	FI	84	13x3¾x1½	B
9	(c.f.)....FC	.....	138	162	32000	11000	11.00/24D	12.00/24S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13¼	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	96	14x3¾x1½	B
10	(c.f.)...FGB	.....	126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6–5¼x6	779	5.7	580	175–2000	7–3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x1½	B
11	(c.f.)...FGR	.....	126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6–5¼x6	779	5.7	580	175–2000	7–3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	89	14x3¾x1½	B
	Willys																														
12	Unv. Jp...CJ-2A	*1146	80	80	2937	‡1646	6.00/16	7.00/15	Own CJ-2A	4–3⅛x4¼	134	6.4	105	60–4000	3–2.33x5.48	N	WG T90A	3	Spi 41-2	Hy	H	** –5.38	Spi 25	B4H	118	520	a	F	80	4x1¼x⅄	P
	Six-Wheelers Wheels Driven ▼																														
	Diamond T																														
13	....9018D3010PA	.....	186	236	40000	13800	10.00/22D	11.00/20	Con R-6572	6–4¾x5½	572	6.0	440	190–2600	7–3¼x14½	Y	Spi 6252.703	15	T SD3010PA	2F	R	** –7.50	T 36021TW	Ws6IA	1230	....	A	TD	104½	10½x3‡x⅄	T
14	....9018SW3012PA	.....	206	224	40000	13900	10.00/22D	10.00/22	Con R-6572	6–4¾x5½	572	6.0	440	190–2600	7–3¼x14½	Y	Spi 6252.703	15	T SW3012PA	2F	R	** –6.16	T 36021TW	Ws6IA	1230	....	A	TD	124	10½x3‡x⅄	T
15	(D)9108SW3012PA	.....	206	206	40000	15400	10.00/22D	10.00/22	Cum HB-600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¾	Y	Spi 7851, 703	15	T SW3012PA	2F	R	** –6.16	Tim 36021 TW	Ws6IA	1082	....	A	TD	124	10½x3‡x⅄	T
16	.(D)9108D462W	.....	206	206	50000	16700	11.00/22D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¾	Y	Spi 7851, 703	15	T SD462W	2F	R	** –8.15	Tim 36021 TW	Ws6IA	1012	....	A	TD	124	10½x3‡x⅄	T
17	.(D)9108SW456W	.....	206	206	50000	16500	11.00/22D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¾	Y	Spi 7851-703	15	Tim SW456W	2F	R	6.8 –7.6	T36021TW	Ws6IA	1230	....	A	TD	124	10½x3‡x⅄	T
18	F.W.D.....M6x6	.....	243	276	58000	▲21400	11.00/24D	11.00/24	Her HXE	6–5⅜x6	935	5.5	650	198–2000	7–3½x16½	Y	Fu	8	Wis SD462	2F	L	** –8.15	Wis F409	Ws6IA	1080	1680	a	T6	183	10⅄x3x‡‡	P
19	(D)....M6X6D	.....	180	276	58000	▲21800	11.00/24D	11.00/24	Cum HB600	6–4¾x6	672	17.	500	150–1800	7–4½x16¼	Y	Fu	8	Wis SD462	2F	L	** –8.15	Wis F409	Ws6IA	1080	1680	a	T6	216	10⅄x3x‡‡	P
	International (2)																														
20	(b)...KB-6F.4R	3200	151	194	22000	6915	7.00/20D	8.25/20	Own BLD250	6–3⅄x4½	251	6.3	200	100–3200	4–2¾x5‡‡	N	Own F51	5	Own RF1450	SF	H	6.16–6.66	Own F470	LH4IHV	495	869	c	PX	77	8⅄x⅄x⅄	T
21	(b)...KB-8F.4R	4850	161	215	27000	8575	8.25/20D	9.00/20	Own RED361	6–4½x4½	361	6.3	282	126–3000	7–3¼x10‡‡	Y	Own F52	5	Own RF1560	SF	H	6.50–7.16	Own F550	LH6IHV	644	1105	c	PX	84	9¼x3⅄x⅄x⅄	T
22	(b)..KB-11F.4R	6750	161	215	37000	10830	9.00/20D	10.00/20	Own RED450	6–4¾x5	451	6.3	360	148–2600	7–3¼x10‡‡	Y	Own F54	5	Own RF1670	SF	H	** –7.16	Own F760	TW6IA	738	1179	G	PX	84	10‡x3⅄x⅄x⅄	T
23	.....W-4064H	12900	203	239	40000	15360	10.00/22	11.00/22	O-Con. S6749	6–5⅜x5½	749	6.0	554	254–2600	7–3¾x15¾	Y	Spi 7741	4	Tim SW3012	WF	H	** –6.16	Own S6303	BW6IA	1168	....	G	FX	108	10x3½x⅄	C
24	Ken- (D)523.4R	.....	193	241	41000	14600	10.00/20	11.00/22	Cum HB6	6–4½x6	672	17.	500	200–2100	7–4½x16½	Y	BL 7841	4	Ti SW3012PA	WF	R	** –6.16	Tim 36000	Ws4rIA	924	1248	a	TD	102	9½x3¼x⅄x⅄	C
25	worth(D)524.4R	.....	193	241	54000	15100	10.00/20	11.00/22	Cum HB6	6–4¾x6	672	17.	500	200–2100	7–4½x16½	Y	BL 7841	4	Tim SW452	WF	R	6.0 –7.6	Tim 36000	Ws4rIA	819	1192	a	TD	102	9½x3¼x⅄x⅄	C
26	.....528.4R	.....	186	234	40000	12500	10.00/20	10.00/22	Bud L0525	6–4½x5½	525	5.5	385	135–2200	7–3x11½	Y	Fu 5A620	5	Ti SW3012PA	WF	R	** –6.16	Tim 35100	Ws4rIA	924	1248	a	TD	102	9½x3¼x⅄x⅄	C
27	.....532.4R	.....	186	234	35000	12500	10.00/20	10.00/22	Wau 6MZR	6–4¾x4¾	404	5.9	300	112–2500	7–2¾x12½	Y	Fu 5A430	5	Ti SW3012PA	WF	R	** –6.16	Tim 35100	Ws4rIA	924	1248	a	TD	102	9½x3¼x⅄x⅄	C
28	.....(D)548.4R	.....	193	241	54000	17000	11.00/22	12.00/24	Cum HB6	6–4½x6	672	17.	500	200–2100	7–4½x16½	Y	BL 7841	4	Tim SD462	DR	R	** –8.15	Tim 36000	Ws4rIA	819	1192	a	TD	109	9½x3¼x⅄x⅄	dbC
29	.....(D)552.4R	.....	255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	BL 7841	4	Tim SD462W	WF	R	** –8.15	Tim F3200W	Ws4rIA	1109	1192	a	TD	168	9½x3¼x⅄x⅄	dbC
	Marmon-Herr.																														
30	(C).....CM5-6	2790	156	....	22500	▲6673	7.50/20D	7.50/20	Ford	8–3⅄x3¼	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	82‡	7½x3x¼	C
31	(C).....CM6-6	2822	180	....	22500	▲6710	7.50/20D	7.50/20	Ford	8–3⅄x3¼	239	6.4	176	100–3500	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	106¼	7½x3x¼	C
32	.....MH-555-6	.....	260	260	37000	▲14900	11.00/20	11.00/20	Her RXC	6–4½x5¼	529	6.3	390	131–2200	7–3x13¼	Y	Fu 5A620	‡5	Tim SD3000	2B	H	** –8.15	Tim F3100W	Ws..A	1092	1608	...	F	93	10⅄x3x⅄	T
33	.....MH440-6	.....	182	....	34000	▲10600	9.00/20	10.00/20	Her WXLC3	6–4¼x4¼	404	5.4	239	118–2800	7–2¾x13¼	Y	Fu 5A430	5	Tim SFD154	2B	H	** –8.43	Tim F2090W	Ws..A	876	....	C	F	96	9‡‡x3x¼	T
34	Oshkosh....W703	.....	Opt	Opt	45000	16950	11.00/20D	12.00/20	Her RXLD	6–4¾x5¼	558	5.4	405	141–2200	7–3½x13¼	Y	Fu 5A650	12	Tim SD454W	2F	H	** –6.31	Own-Tim	L6IH	1080	1625	G	TX	Opt	10½–3¼–½	B
35	....W1600BD	.....	245	Opt	60000	22770	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT6IA	1080	1625	G	TX	160	12½–3¼–½	B
36	....‡W1600BDH	.....	267	Opt	60000	24300▲	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT6IA	1080	1625	G	TX	174	12½–3¼–½	B
37	....‡W1602BDH	.....	272	Opt	95000	29300	14.00/24D	14.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD472	2F	H	** –13.9	Own-Tim	LT6IA	....	2217	G	TX	177	12½–3¼–½	B
38	.....W1600BG	.....	245	Opt	60000	22770	11.00/24D	12.00/24	Bu MO893	6–5½x6	893	...	625	200–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT6IA	1080	1625	G	TX	160	12½–3¼–½	B
39	(D)....W1600CD	.....	259	Opt	60000	23400▲	11.00/24D	12.00/24	Cum 6HBI	6–4½x6	672	...	500	150–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT6IA	1080	1625	G	TX	174	12½–3¼–½	B
40	(D)..W1600CDS	.....	259	Opt	60000	23700▲	11.00/24D	12.00/24	Cum 6HBIS	6–4½x6	672	...	635	200–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT6IA	1080	1625	G	TX	174	12½–3¼–½	B
41	(D)...‡W1600CDH	.....	265	Opt	60000	24000▲	11.00/24D	12.00/24	Cum 6HBI	6–4½x6	672	...	500	150–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT6IA	1080	1625	G	TX	172	12½–3¼–½	B
42	(D)..‡W1600CDSH	.....	267	Opt	60000	24300▲	11.00/24D	12.00/24	Cum 6HBIS	6–4½x6	672	...	635	200–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT6IA	1080	1625	G	TX	174	12½–3¼–½	B
43	Peterbilt(D)344DT	13564	189	Opt	43000	16250	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 7741	12	Tim SW3012W	WF	A	6.00– 8.5	T 36000W	Ws6IA	1212	1734	a	FD	106½	10⅜x3‡x⅄	TL
44	(D).....345DT	14119	187	Opt	54000	17300	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 7741	12	Tim SW456W	WF	A	6.00–10.2	T 36000W	Ws6IA	1450	1626	a	FD	106½	10⅜x3‡x⅄	TL
45	(D).....354DT	14360	187	Opt	56000	17450	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 7741	12	Tim SW456W	WF	A	6.00–10.2	T 27454W	Ws6IA	1450	1626	a	FD	106½	10⅜x3‡x⅄	TL
46	(D).....355DT	14760	187	Opt	56000	17900	10.00/20D	11.00/22	Cum HB600	6–4¾x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 7741	12	Tim SD462W	2F	A	** –8.15	T 27454W	Ws6IA	1000	1626	a	FD	106½	10⅜x3‡x⅄	TL
47	Sterling...HB8130	.....	164	183	32000	11000	8.25/20	10.00/20	Wau 6MZA	6–4¼x4¼	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	T-SBD1555DPH	SF	L	6.80–13.14	T-35011H	T6Hy	664	1134	A	TX	83	9x3¼x1¼	A
48	.....HD8140	.....	164	183	36000	11800	9.00/20	10.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	T-SD3010PA	2F	L	6.84–10.22	T-35011TW	Ws6IA	1074	1554	A	TX	83	9x3¼x1¼	A
49	.....HW8160	.....	164	183	42000	12800	10.00/20	11.00/20	Wau 6SRKR	6–4½x5½	517	5.5	368	125–2250	7–3x13¼	Y	Fu 5A62	5	T-SW3010PA	WF	L	5.40–8.50	T-36000TW	Ws6IA	1082	1574	A	TX	83	9x3¼x1¼	A
50	.....HW8235	.....	182	193	52000	15700	11.00/20	11.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86♦	4	T-SW456PA	WF	L	5.67–8.20	T-27454W	Ws6IA	1308	1892	A	TX	92	9¼x3½x1¾	A
51	.....HW8160H	.....	182	193	42000	14250	10.00/20	11.00/20	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86	4	T-SW3012PA	WF	L	4.71–6.17	T-36000TW	Ws6IA	1082	1574	A	TX	92	9x3¼x1¼	A
52	.....HW8235H	.....	182	193	52000	16000	11.00/20	11.00/24	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86	4	T-SW56PA	WF	L	5.66–8.20	T-27454W	Ws6IA	1308	1892	A	TX	92	9¼x3½x1¾	A
53	.....HC8195	.....	170	189	48000	15300	10.00/20	11.00/22	Wau 140GK	6–4½x5½	525	6.0	426	142–2200	7–3¼x13½	Y	Fu5A62-3A92	15	Own 195W	CD	R	6.04–7.31	T-36000TW	Ws6IA	1082	1622	A	TX	83	9¼x3½x3½	A
54	.....HC8265	.....	182	193	60000	17750	11.00/20	12.00/24	Wau 145GK	6–5¼x6	779	6.	258	5–186–2100	7–3½x17¾	Y	Fu 4B86♦	12	Own 265W	CD	R	9.21–13.16	T-27454W	Ws6IA	1060	1732	A	TX	92	9¼x3½x3¾	A
55	.....HC8297	.....	182	193	70000	20750	12.00/24†	13.00/24‡	Wau 145GK	6–5¼x6	779	6.	258	5–186–2100	7–3½x17¾	Y	Fu 4B86♦	12	Own 330W	CD	R	9.21–13.16	T-27454W	Ws6IA	1280	1872	A	TX	92	9¼x3½x3½	AL
56	.....HC8330	.....	182	193	80000	23150	12.00/24	14.00/24‡	Wau 145GK	6–5¼x6	779	6.	258	5–186–2100	7–3½x17¾	Y	Fu 4B86♦	12	Own 330W	CD	R	9.21–13.16	T-27454W	Ws6IA	1280	1872	A	TX	92	12x3½x3½	AL
57	.....HC8195H	.....	182	193	48000	16000	10.00/20	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Fu4B86-3A92	12	Own 195W	CD	R	6.04–7.31	T-36000TW	Ws6IA	1082	1622	A	TX	92	9¼x3½x3½	A
58	.....HC8265H	.....	182	193	60000	18100	11.00/20	12.00/24	Cum HBD600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86♦	12	Own 265W	CD	R	9.21–13.16	T-27454W	Ws6IA	1060	1732	A	TX	92	9¼x3½x3¾	A
59	.....HC8297H	.....	182	193	70000	21050	12.00/24†	13.00/24‡	Cum HBD600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86♦	12	Own 330W	CD	R	9.21–13.16	T-27454W	Ws6IA	1280	1872	A	TX	92	9¼x3½x3½	AL
60	.....HC8330H	.....	182	193	80000	23450	12.00/24	14.00/24‡	Cum HBD600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86♦	12	Own 330W	CD	R	9.21–13.16	T-27454W	Ws6IA	1280	1872	A	TX	92	12x3½x3½	AL
	Truckstell																														
61	(C)...F2X26.2F	.....	156	237	26000	▲5900	7.50/20	8.25/20	Ford	8–3⅄x3¼	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	SF	..	** –6.67	Ford	F6IHV	502	836	c	TX	82½	7½x3x.47	CTf
62	(C).F2X27-0.2F	.....	156	237	27000	▲6450	7.50/20	8.25/20	Ford	8–3⅄x3¼	239	6.4	180	100–3800	3–2½x4.71	N	Ford	8	Eat 1350	SFd	..	5.83–8.11	Ford	F6IHV	502	836	c	TX	82½	7½x3x.47	CTf
63	(C)...F2X34.2F	.....	156	237	34000	▲8235	7.50/20	10.00/20	Ford	8–3⅄x3¼	239	6.4	180	100–3800	3–2½x4.71	N	F and BL	12	Cla R1300	SF	..	5.67–6.83	Ford	F6IHV	605	1043	a	TX	82½	7½x3x.47	CTf

(Turn to Page 103, Please)

▲ Includes Cab. ♦ Auxiliary transmission, Spicer 8031. † Rear only; Front 11.00/24. ‡ Rear only; Front 12.00/24. ⅄—Chassis Weights on Duals Front, Center and Rear. ‡—Hydraulic Coupling.

‡—Hydraulic Coupling. ‡—Chassis Weights on Duals Front, Center and Rear. ‡ Rear only; Front 12.00/24. † Rear only; Front 11.00/24. ♦ Auxiliary transmission, Spicer 8031. ♠ Includes Cab.



FEDERALS HAVE WON . . .

By Costing Less to Run!



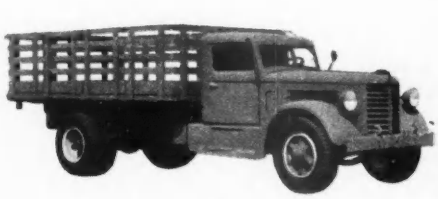
Federal was cited four times for outstanding achievement in the production of trucks for the armed Forces.

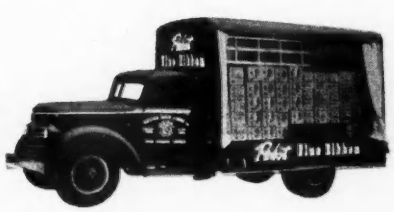
For 36 years Federal has been building trucks that have enjoyed an outstanding reputation for ruggedness, dependability, low upkeep cost, long life and bed-rock operating economy.

Men in a position to judge—fleet owners, maintenance superintendents, service mechanics, dispatchers and drivers—have learned by keeping comparative cost records, checking lay-up time, servicing and running costs that Federal Trucks have those qualities of endurance, economy and rugged all-truck performance that insure owner satisfaction.

That's why so many truck users now say: "Toss the Tough Jobs to Federal."

FEDERAL MOTOR TRUCK CO. • DETROIT 9, MICHIGAN







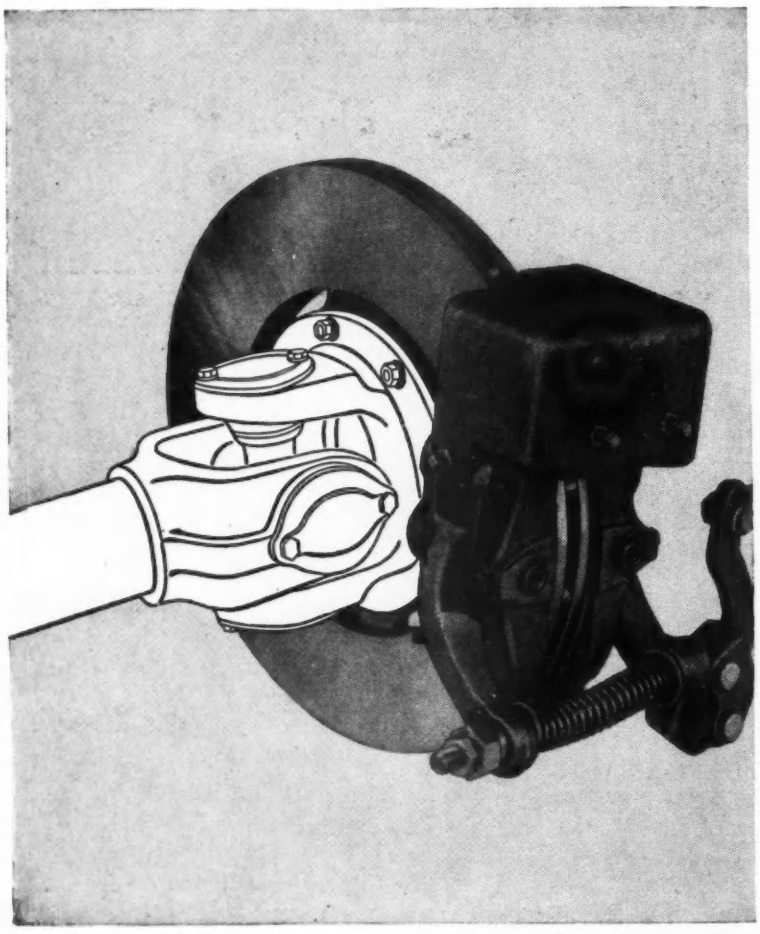
FEDERAL TRUCKS

Since 1910 . . . Known in Every Country—Sold on Every Continent

(Turn to Page 103, Please)

PARKING BRAKES ARE A HAZARD ON MODERN BUSES AND TRUCKS

There's a difference between a parking brake and a real emergency brake. A parking brake that is just that and nothing more is a hazard. Sooner or later, a driver will use it as an emergency brake—and invite trouble. You avoid that hazard when you specify Tru-Stop Emergency Brakes.



DETROIT, MICHIGAN—The TRU-STOP Brake is more than a parking brake. It is engineered and built to decelerate, stop and hold the entire load. It is an independent braking system which can supplement or—in emergency—substitute for service brakes.

The unique performance of TRU-STOP Emergency Brakes is due to their "self-cooling" feature. The intense heat of braking is thrown off immediately—instead of being confined as in drum-type brakes. This also results in much longer life for linings and for the disc itself.

Further advantage of TRU-STOP Emergency Brakes is the ease with which they can be adjusted or relined. On a per-stop or per-mile basis, TRU-STOPS cost considerably less than ordinary drum-type brakes.

For complete information, write our Detroit office.

TRU-STOP *Emergency* BRAKES

ACCO

TRADE MARK

6-235 General Motors Bldg., Detroit 2 • 695 Bryant Street, San Francisco 7 • Bridgeport, Conn.

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

In Business for Your Safety

(Continued from Page 100)

(Continued from Page 100)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES Standard Front and Rear	TIRE SIZES D-dual rear S-single rear Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	Gear and Type	Drive X Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Truckstell Cont'd.																															
2	F2X34-0		135	224	34000	4 8235	7.50/20	10.00/20	Ford	8-3¾x3¾	239	6.41	180	100-3800	3-2¼x4.71	N	Ford and BL	12	Cla R1300	8F	5.67–6.83	Ford	F6IHV	605	1043a	TX	82½x7½x3x.47	CTI
3	F4X26 4R		144	210	26000	4 6300	7.50/20	8.25/20	Ford	6-3¾x3¾	239	6.41	180	100-3800	3-2¼x4.71	N	Ford	8	Ford	8F	6.07–10.5	Ford	F6IHV	502	836e	TX	63½x7½x3x.47	CTI
4	F4X27-0		117	180	27000	4 6300	7.50/20	8.25/20	Ford	6-3¾x3¾	239	6.41	180	100-3800	3-2¼x4.71	N	Ford	8	Ford	8F	6.07–10.5	Ford	F6IHV	502	836e	TX	63½x7½x3x.47	CTI
5	F4X29 4R		144	210	29000	4 7000	7.50/20	8.25/20	Ford	6-3¾x3¾	239	6.41	180	100-3800	3-2¼x4.71	N	Ford	8	Ford	8Rd	7.47–12.9	Ford	F6IHV	502	836e	TX	63½x7½x3x.47	CTI
6	F4X30-0		117	180	30000	4 7200	7.50/20	8.25/20	Ford	6-3¾x3¾	239	6.41	180	100-3800	3-2¼x4.71	N	Ford	8	Ford	8F	7.47–12.9	Ford	F6IHV	502	836e	TX	63½x7½x3x.47	CTI
7	C2X26 2F		157	234	26000	4 5800	7.50/20	8.25/20	Chevrolet	6-3¾x3¾	235	6.41	192	93-3100	2¼x15/16	N	Chevrolet	4	Chevrolet	8F	** 6.17	Chevrolet	C6IHV	546	780a	21	82½x7½x3x.47	CTI
8	C2X28 2F		157	234	28000	4 6500	7.50/20	8.25/20	Chevrolet	6-3¾x3¾	235	6.41	192	93-3100	2¼x15/16	N	Chevrolet	4	Tim	8Rd	5.64–8.22	Chevrolet	C6IHV	546	780a	21	82½x7½x3x.47	CTI
9	C2X34-0		157	234	34000	4 8635	7.50/20	10.00/20	Chevrolet	6-3¾x3¾	235	6.41	192	93-3100	2¼x15/16	N	C and BL	8	Cla R1300	8F	5.67–6.83	Chevrolet	C6IHV	546	780a	21	82½x7½x3x.47	CTI
10	C2X34 2F		157	234	34000	4 8235	7.50/20	10.00/20	Chevrolet	6-3¾x3¾	235	6.41	192	93-3100	2¼x15/16	N	C and BL	12	Cla R1300	8F	5.67–6.83	Chevrolet	C6IHV	546	780a	21	82½x7½x3x.47	CTI
11	C4X26 4R		145	212	26000	4 6170	7.50/20	8.25/20	Chevrolet	6-3¾x3¾	235	6.41	192	93-3100	2¼x15/16	N	Chevrolet	8	Chevrolet	8F	6.41–11.1	Chevrolet	C6IHV	546	780a	21	82½x7½x3x.47	CTI
12	C4X27-0		117	194	27000	4 6880	7.50/20	8.25/20	Chevrolet	6-3¾x3¾	235	6.41	192	93-3100	2¼x15/16	N	Chevrolet	16	Cla R1300	8Rd	6.41–11.0	Chevrolet	C6IHV	512	836a	TD	63½x7½x3x.47	CTI
13	C4X29 4R		145	212	29000	4 7290	7.50/20	8.25/20	Chevrolet	6-3¾x3¾	235	6.41	192	93-3100	2¼x15/16	N	Chevrolet	16	East 1350	8Rd	7.47–12.9	Chevrolet	C6IHV	512	836a	TD	63½x7½x3x.47	CTI
14	C4X30-0		117	212	30000	4 7290	7.50/20	8.25/20	Chevrolet	6-3¾x3¾	235	6.41	192	93-3100	2¼x15/16	N	Chevrolet	16	East 1350	8Rd	7.47–12.9	Chevrolet	C6IHV	512	836a	TD	63½x7½x3x.47	CTI

▲ Includes cab.

ICC DEFINES COMMERCIAL ZONES

The Interstate Commerce Commission has prescribed a formula for determining commercial zones adjacent to various sized cities for the purpose of determining whether carriers are exempt from the provisions of Part II of the ICC Act (except for hours of service and safety of operation). The new formula defines "municipality" and "contiguous municipalities." Docket Ex Parte No. MC-37 gives full details.

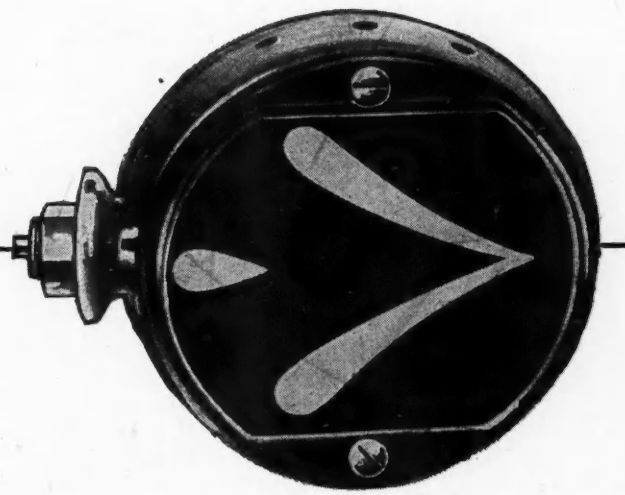
HIGHWAY DEVELOPMENTS

Shortages of labor and material plus high bids delayed the nation's highway program during 1946 but still permitted the awarding of contracts for 43,600 miles of roadway improvements at a cost of $740,000,000. Of the total, $512,000,000 was allocated for Federal-aid primary and secondary roads, $228,000,000 for state and local projects.

Nearly all states in the "snow belt" faced the 1945-1946 season with shortages of equipment for removal of snow and ice. A total of 19,488 trucks, 932 tractors and 2970 graders in 36 states were on hand for the job. Last winter Pennsylvania spent $4,947,000 on snow removal to lead all other states. New York and Michigan were next, spending $3.4 million and $2 million respectively.

Teleoptic

Directional Signals



A Complete Line—Properly designed for every type of vehicle. Precision Built for maximum Efficiency and Durability.

Write for New Catalog and Installation Diagrams

THE TELEOPTIC COMPANY

1245 MOUND AVE. RACINE, WISCONSIN

Beautiful Bodies

(CONTINUED FROM PAGE 55)

number of passenger cars and 40,000-lb. and 60,000-lb., g.v.w., tractor semi-trailer trains in between—here is the way it works out.

Basic Color Scheme

TO BEGIN with, the basic color scheme for all vehicles is white and blue. The upper part of the vehicles are painted white, the lower part, including fenders, are painted in blue. This same blue is also used for lettering in combination with a lighter blue for the side shadows.

A special light gray is used on all hoods (to cut down glare), and a specially-compounded, very-finely-ground synthetic aluminum enamel is used for striping and the roofs of the vehicles.

The white is so white that when the color was first selected no producer could furnish a finish that would meet the Hoffman requirements. While most colors fade to a lighter shade than the original, white ages darker. Finally, one of the largest manufacturers made up a special batch; named it Hoffman White and later assigned to it a regular production number. It is a synthetic enamel and, needless to say, is the best that money can buy.

The blue is a rich Royal Blue, which was originally developed for the Pabst Brewing Co., and is called Pabst blue. It is, likewise, made by the same manufacturer that produces the white and is of the same quality synthetic enamel.

Worst Come, First Served

HOFFMAN vehicles are routed to the Paint Shop whenever it is decided that the paint has changed sufficiently to warrant a repainting on a worst-come, first-served basis. It was impossible to pin the management down on an average frequency figure owing to a very large variation caused by type of vehicle, type of operation and (at least during the war period) by quality of finish. But the average would be close to two years.

Special Shop for Painting

THE shop itself is interesting. It is an oldish garage, kept immaculately clean and used exclusively for painting and body work. It is big enough to house about nine large vehicles at a time, with plenty of room for work. No separate spray booths are used, but a huge suction fan, fitted to overhead ducts, can clear the spraying area of the last vestige of dust in a matter of minutes.

(TURN TO PAGE 106, PLEASE)



Adapting a standard army mobile machine shop body, Hartman Corp. licked the shortage problem for this special demonstrator for its new chemical cleaner and rapid charger. Special equipment includes a 25 KVA generator, air compressor, hot and cold running water and bunks for the two-man crew

MORE ...and more, specifications call for correct cooling system care!



Warner SERVICE CLEANER Cleans thoroughly

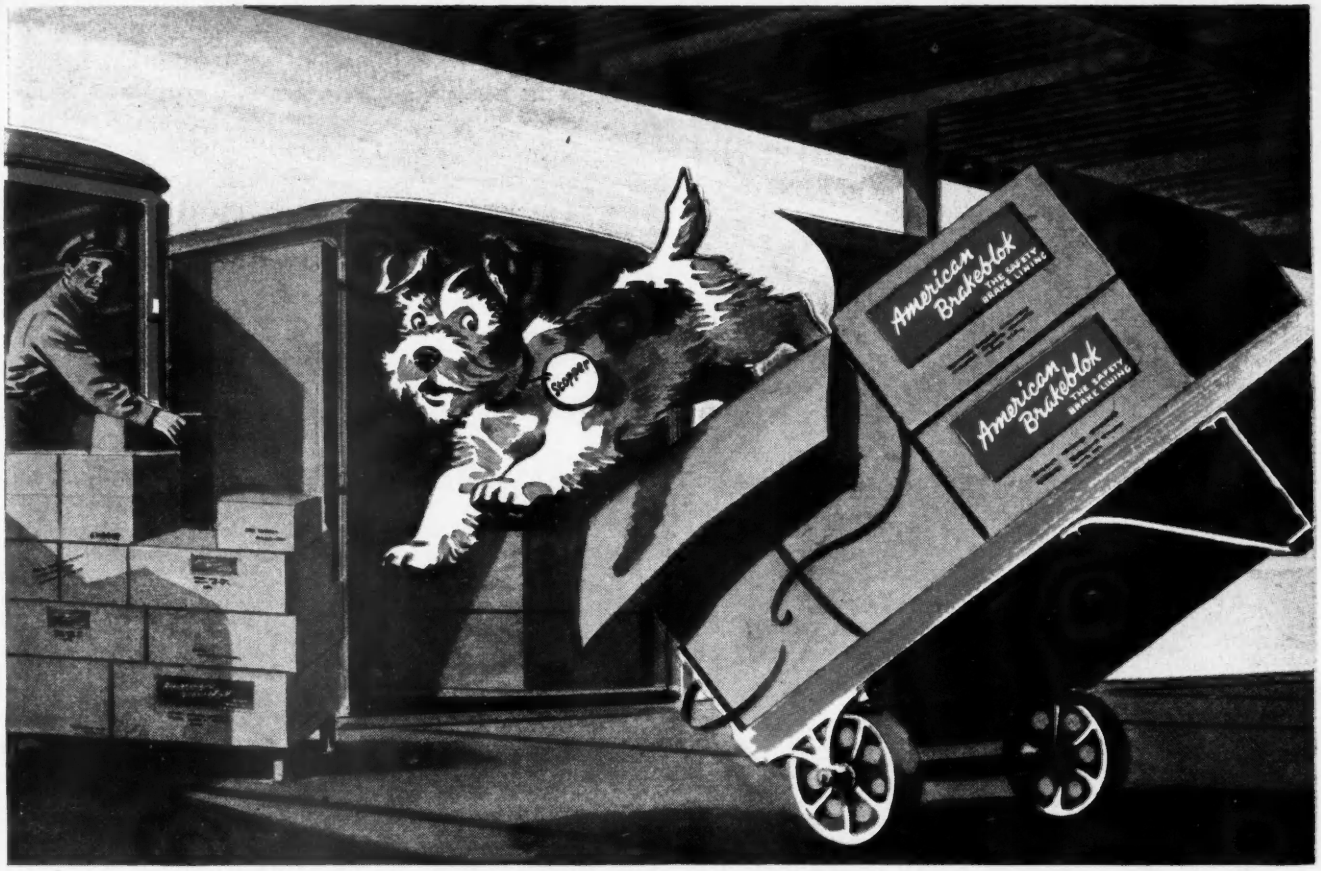
Warner COOLING SYSTEM PROTECTOR Prevents rust, corrosion

Warner LIQUID SOLDER Non-metallic, deposits tiny fibers to repair leaks

Standard of protection for more than 25 years

Write for FREE booklet on care of the cooling system

WARNER-PATTERSON COMPANY • 920 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS



"Imagine me in Zanzibar!"



TAKE IT from me, the American Brakeblok shipping room is a good place for a pup to dodge.

After lunch the other day, I curled up for a nap in a half-filled carton. Just as I started to dream about a big steak-bone, some fellows picked up the carton, put some brake lining in it and started to ship it.

Do you know where that shipment was going? If I hadn't wiggled my way out, I'd be in Zanzibar today!



Shipments of American Brakeblok Brake Lining *are* made frequently to many far-off parts of the world—and, of course, big shipments go daily to every section of the United States. Almost everywhere that the automobile is known, American Brakeblok Brake Lining is known too, for smooth, safe stops, long life and complete dependability.

The American Brakeblok policy of manufacturing the *best brake lining that can be made* has won enthusiastic acceptance from the motoring public, dealers, manufacturers and fleet operators. When you install American Brakeblok Brake Lining the result is few adjustments and whole-hearted customer satisfaction. Countless fleet operators know that American Brakeblok gives the extra margin of safety that is so desirable in heavy-duty operation while holding costs down.

Brake Lining of the proper size and correct frictional properties is made by American Brakeblok for all passenger cars, trucks and buses.



Distribution through 38 NAPA Warehouses

NAPA Assurance of Quality

American Brakeblok
BRAKE LINING

AMERICAN Brake Shoe COMPANY

AMERICAN BRAKEBLOK DIVISION
DETROIT 9, MICHIGAN

Beautiful Bodies

(CONTINUED FROM PAGE 104)

Preparation Must Be Right

AS IN all painting work, the biggest secret of Hoffman success is in the complete preparation. Hence the first step is body repairs accomplished with the usual array of body and fender tools, welders and power sanders, plus a lot of brawn and the craftsmanship of experienced workers.

Next comes the preparation of surfaces themselves, which may include complete stripping to the bare metal or merely careful hand sanding of the previous finish. The decision rests solely in the capable hands of Paint Shop Foreman Joseph Henkel and his co-workers. It is based entirely on whether previous experience indicates the old surface will hold. If stripping is necessary, it is done with chemicals and hand scraping.

After the vehicle has been either completely stripped or the areas to be redone have been stripped, hard to get at dents on the panels of the bodies of trucks or trailers are puttied with a high-quality, special putty and are gradually built up to the point where the sides again are smooth and without dents. On the day of our most recent visit, a big six-wheeler was going through this operation, the putty being applied by hand with a broad knife. The surface was old and this was the best assurance that the new finish would be absolutely smooth. More often, however, only touch up work with the putty knife is required. After the putty has set it is sanded by hand with wet sandpaper.

Next is the application of the surfacer. Either the entire vehicle, or the spots to be repainted, are sprayed. After the surfacer is dry it is again wet sanded by hand.

Masking Comes Next

EACH year the shop uses hundreds of rolls of masking tape and quite a few rolls of heavy brown paper. All surfaces other than the one to be painted are blocked out. For instance, the area which will receive the blue is covered while the white is being sprayed and, likewise, the area which receives the white is covered when the blue is being sprayed.

Dust-Free Air

THEN comes a novel step. Preparatory to the spraying of the colors, all work on the job is stopped temporarily, the shop is swept and the blowers turned ou. While

(TURN TO PAGE 108, PLEASE)

The effective combination of hydraulic lift and cantilever boom provides the smooth, easy operation of the Ruger.



a One Hand Job

WITH THE LOW-COST

PATENTED

RUGER *Hydraulic* FLOOR CRANE

Lifting out a motor is easy with a Ruger. Wheel the Ruger to the job, hook onto motor and work the pump lever a few short strokes. Then walk away with motor and set it down at cleaning or inspection, or pick it up and move it around to wherever you want to work on it. The Ruger will go anywhere there's a floor to travel on.

Many shops also use the Ruger on brake, steering, shock-absorber, muffler and rear-end jobs, for lifting truck cabs, for removing and replacing transmissions and for handling heavy parts and assemblies. Combines advantages both of floor jack and overhead crane . . . frequently is more convenient than a car lift. When you hoist one end of a chassis with a Ruger, everything is clear underneath.

Available in 1-ton, 2-ton and 3-ton capacities; also a "stubby" model for removing and installing bus motors.

Be sure to get your free copy of our new picture bulletin containing specifications and photos of Ruger Cranes at work. Mail coupon below to our nearest office, *today*.

RUGER *Equipment Co., Inc.*

408 Leader Building
Cleveland, 14, Ohio

P. O. Box 3821, Portland 8, Ore.

Please send me free copy of New Ruger Bulletin:

Your Name_____

Company_____

Address_____



Hold-over plates, especially designed for use in refrigerating florists' delivery trucks, are announced by Kold-Hold Mfg. Co. Used in connection with plug-in electric compressors, they not only provide refrigeration during delivery but permit storage of flowers in the truck overnight if desired



Nylon shock shield for truck tires announced by B. F. Goodrich

A typical example of B. F. Goodrich improvement in tires

A NEW nylon shock shield in every big B. F. Goodrich truck tire is the latest improvement in these tires which are now better than prewar!

Nylon—the miracle material which was used during the war for parachutes, glider tow ropes, and airplane tires because of its strength and elasticity—is now used to break the force of sharp blows in truck tires. Right under the tread of every B. F. Goodrich truck tire in sizes 8.25 and larger is this nylon shock shield.

When a heavy truck hits a rock, a curb, or deep rut, the tire must absorb the blow. Such an impact often leads to a bad bruise or eventually a blow-out. That's one reason why so many truck tires reach the scrap pile before they're really worn out.

In the new B. F. Goodrich tires nylon shock shields give extra protection to the rayon cord body. This results in a four-way saving for truck owners: (1) Average tire mileage is increased. (2) Tires have greater resistance to bruises. (3) There's less danger of tread separation. (4) More tires can be recapped.

The development of truck tires with a nylon shock shield is typical of the constant improvement being made in all types of tires by B. F. Goodrich. Only from B. F. Goodrich can you get truck tires built with a weftless rayon cord body. Only from B. F. Goodrich can you get the added protection of nylon shock shields.

Nylon makes tires more expensive to build, yet these new B. F. Goodrich truck tires sell at regular prices. *The B. F. Goodrich Company, Akron, Ohio.*

Truck Tires BY

B.F. Goodrich

Beautiful Bodies

(CONTINUED FROM PAGE 106)

the dust is being cleared from the air, the surface gets a final wiping with treated cheesecloth (tacking cloth) and then, just before "quitting time," the surface is sprayed.

This process has no secret tricks other than that it is done right—with good equipment and experienced hands. A mist coat is sprayed first, followed by a flow coat. This process allows the vehicle to dry overnight without any further disturbance in the shop.

The same procedure is followed the next day, when the second color is sprayed precisely as the first color on the previous day. Owing to weather conditions and humidity in the air, it might be necessary to allow the first color more time to dry; in which case, the second color would be sprayed two days later.

When the second coat is thoroughly dry the vehicle is taped up again for spraying of the gray and the aluminum. At the same time, the very interesting lettering process is begun.

Lettering is Unusual

HOFFMAN, and now Pabst, lettering actually begins in the company's art department under the supervision of Art Director Barney Brienza who created the original designs for the intricate patterns noted in the accompanying illustrations. From these designs drawings are made for the stencils and perforated paper stencils are prepared by the Art Department for each lettering design.

On the truck to be painted the areas to be lettered are covered with masking tape, the rest of the vehicle being masked with masking paper. Next, the perforated outline of the stencil is transferred to the tape by using a pounce bag filled with lamp black. When the pounce paper is removed, the outline for both principal and shaded parts are visible.

Now the main body letters are cut out by hand, using a very sharp stencil knife (the stencil cutter at Hoffman makes his own knives from hacksaw blades). Great care must be used to avoid cutting too deep and, thereby, injuring the newly-applied finished coat. The tape is then peeled out of the main letters, and the letters are sprayed in color by using a low (15 lb.) pressure to avoid build up at the edges. Again a mist coat is used first then a flow coat.

When the lettering is dry, the tape which covered the shaded area (side shadows)—pounced and cut at the same time as the main letters—is removed. Now the original lettering is covered with a semi-transparent masking tape, through which the letter is clearly visible. This tape is then cut along the lines of the original letters. Now only the side shadow lettering is open, and it is sprayed in a light blue color using the same process as on the main lettering.

The result of this type of a job is a lettering so perfectly executed, and so sharply defined, that it gives to the lettering a raised effect. In time the edges wear smooth with the adjacent finish but never chip. It is a job more uniform and some-

(TURN TO PAGE 110, PLEASE)



Tune up your Horsepower



Restore lost pick-up, power and smoothness to your motors with Casite. It frees sticking valves and rings . . . speeds lubrication . . . gives engines a *real* cleaning.

and keep it tuned up...



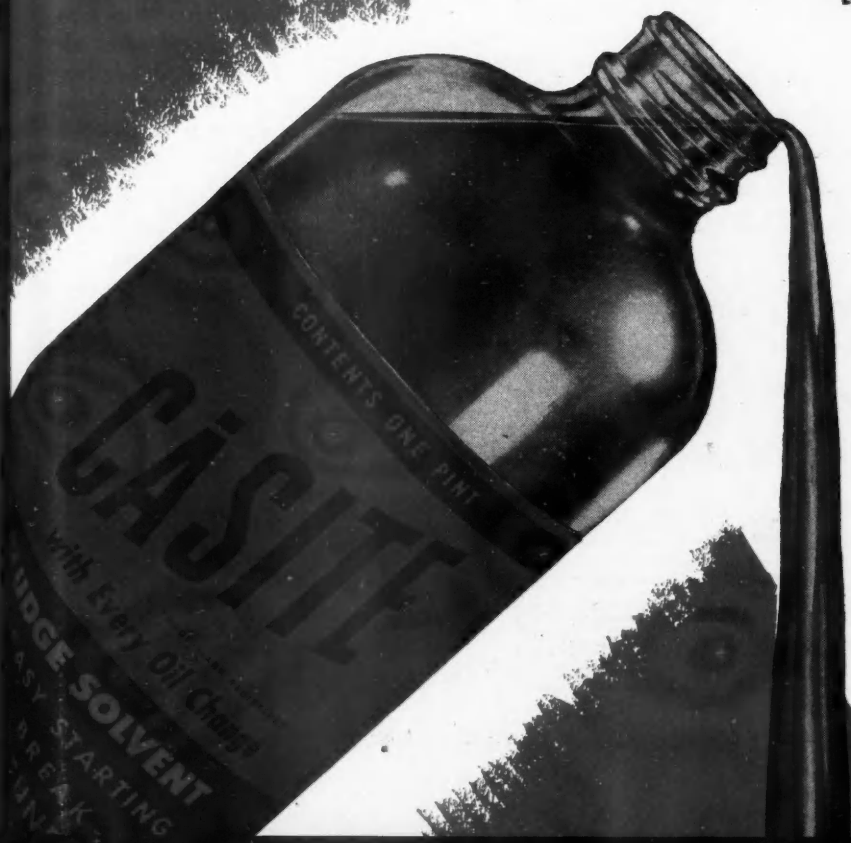
For continued top performance, many of the largest fleets in the nation use Casite regularly. Casite retards formation of sludge and gum . . . reduces engine wear . . . *keeps* motors clean, *keeps* them keen.

...with Casite!



It's quick and easy to use . . . and it pays for itself many times in lower operating costs and higher engine efficiency. Any motor runs better and lasts longer with Casite . . . no matter what kind of motor oil you're using. See instructions on container. The Casite Corporation, Hastings, Michigan.

LISTEN TO "I DEAL IN CRIME" • *Saturday Nights* • ABC



CLEANS MOTORS
KEEPS MOTORS CLEAN

Beautiful Bodies

(CONTINUED FROM PAGE 108)

what faster than hand lettering, infinitely superior to ordinary stenciling and it possesses extreme durability due to the fact that the same paints used for the overall finish are used in the lettering.

Stencils for Trademark

FOR the Blue Ribbon emblem, used on the doors of both passenger cars and trucks, a very thin paper stencil is used. These are made up, from Pabst designs, by a commercial company. An interesting sidelight is that they are cut out with a jig-saw in tightly packed layers of several hundred at a time.

These stencils are not self-adhesive, but are applied to the surface with high-quality rubber cement. Because of the intricate pattern several dummy sections are included to hold the parts of the stencil together; these must be cut out by hand before spraying. The spraying process and the result is similar to the other lettering described above.

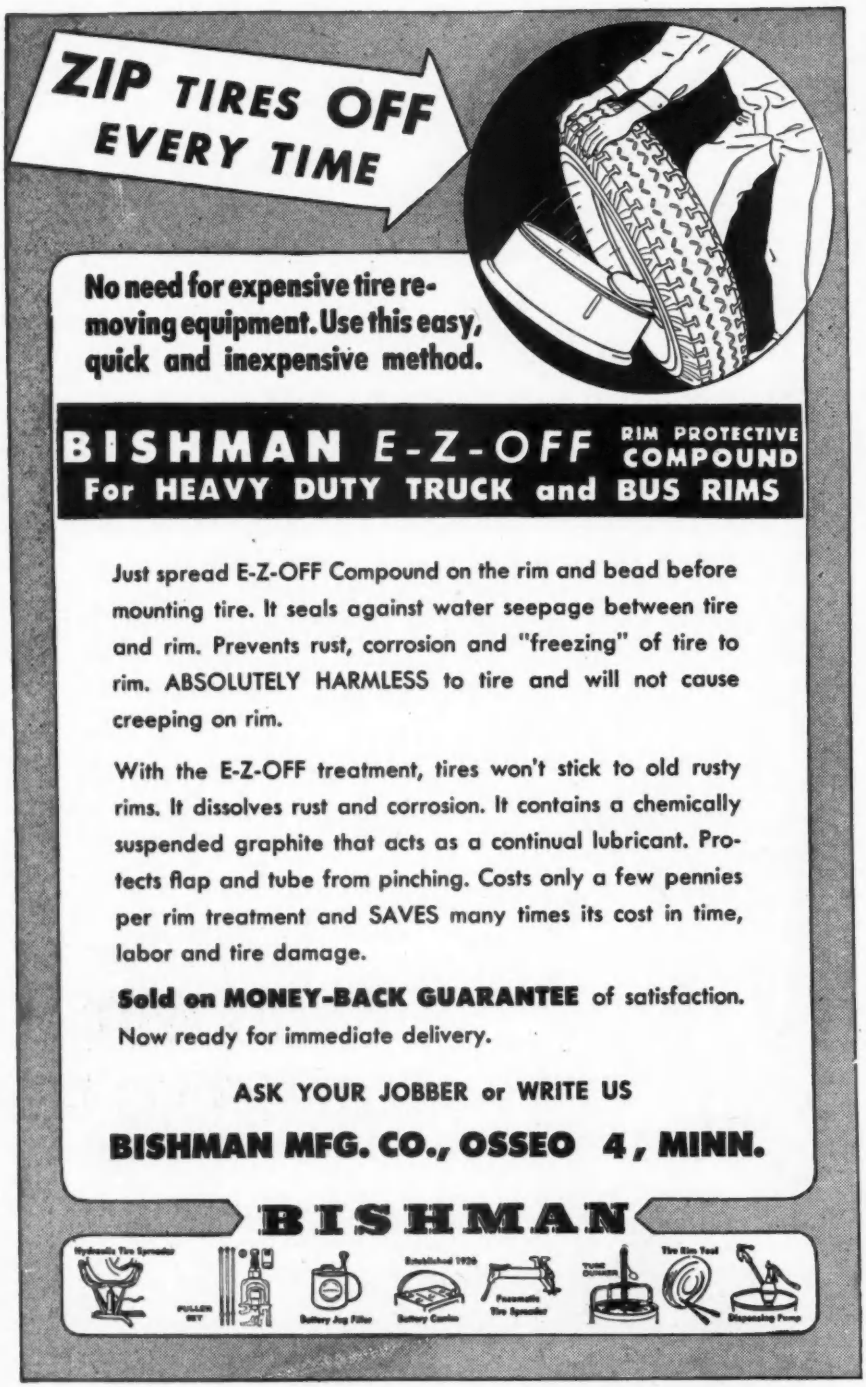
Most of the Hoffman case goods delivery trucks follow a unique design, originated by the company, using sliding doors fabricated from wooden strips of hard maple or birch, secured to a canvas backing with waterproof glue. These flexible sliding doors, incidentally, slide around the ends of the body on curved tracks. They have the singular advantage of providing either complete closure or no closure at all; since all doors may be fully opened at the same time for unloading, loading or cleaning purposes. Many of these trucks have been in use for 10 years or longer.

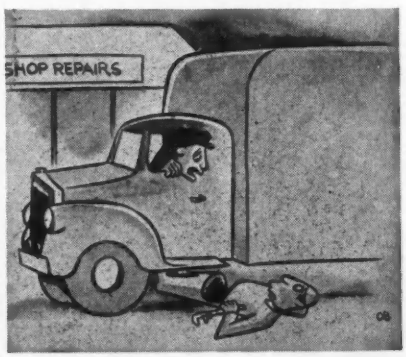
Silk Screening For Doors

ANOTHER advantage of these doors, which form the actual side panels of the body, is that they can be removed easily from the truck for lettering purposes. The silk screen method is used to apply the lettering to these doors.

In this process, frames on which high-grade silk has been stretched taut are used. Especially prepared film furnishes the stencils for the patterns. The process is approximately the same as the cutting of the tape. The film is cut out in the areas to be screened. The film is then removed. Since this film is applied to a paper base, again care has to be exercised not to cut too deeply into the paper backing. After the film is adhered to the silk, and after allowing enough time for it to dry, the paper backing is removed from the silk and the screen is ready for use. (All the silk is now impregnated

(TURN TO PAGE 112, PLEASE)

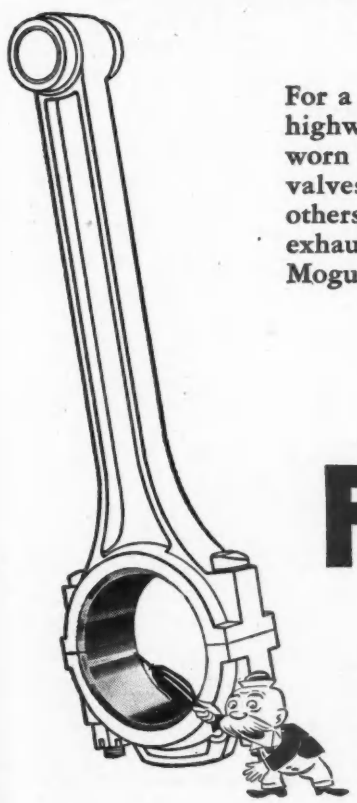




"You mean you weren't done yet?"

Performance goes up in smoke

when worn connecting rod bearings cause oil pumping



For a clean getaway at traffic lights, to make headway on the highway, and to protect more costly engine parts, replace those worn bearings. They let excess oil carbon-foul pistons, rings, valves and spark plugs. One badly worn bearing can oil-starve others or cause costly crankshaft damage. Worn bearings make exhaust smoke instead of performance! Replace with Federal-Mogul Oil-Control Bearings to restore power, pep and economy.

FEDERAL-MOGUL SERVICE
DIVISION OF FEDERAL-MOGUL CORPORATION
COLDWATER, MICHIGAN

Replace in Sets with Genuine

FEDERAL-MOGUL

Oil-Control Bearings



Beautiful Bodies

(CONTINUED FROM PAGE 110)

with film except in those areas where the lettering or the design has been peeled.)

The screen is then placed on the surface to be lettered and an especially prepared silk screen paint, of a heavier consistency than the spraying paint, is applied to this surface. A single stroke of a rubber squeegee produces a clean, smooth impression on the surface of the doors. While this method works admirably for the doors, which may be removed from the truck and laid flat, it is not being used on any vertical surfaces.

This process is accomplished in a separate department, financially supported not only by fleet expenditures but by the Advertising Department as well.

Naturally, while the doors are off they are carefully checked prior to screening; damaged slats replaced and the doors are refinished in Hoffman white.

Washing is Frequent

ONCE decked out in their pure white garb, the trucks and cars have to be kept immaculately clean. That is the job of 10 washers who are located at the Newark plant and at the three garages on the New York side of the Hudson River. They wash on a continuous basis and find time for a semi-annual polish job as well. For the latter, a combination cleaner and wax polish is used on truck cabs and passenger car bodies. Truck bodies, being largely vertical surfaces and hence not subject to as much road film as other parts, are not polished.

Average Cost Data

HOW much does all this cost in dollars and cents? We held up on that question until now, figuring we had laid down sufficient hurdles at the begining of the story. Here are average figures as supplied by Walter Hartig, the company's industrial designer from whom much of the push of the company's appearance-mindedness has stemmed. The figures include labor, material and paint shop overhead:

	Fully Stripped	Refinished on old surface
30 ft. trailer	$315	$275
Tractor	97	85
Van body (closed)	127	110
Bottle Delivery with sliding doors	127	110

To this must be added the tangible wages of the washers; plus the intangible but vital asset of having grouped together the 10 technicians who wield the brushes, spray guns, knives, hammers and tools of the Paint Shop.

Maintenance is Tops

FINALLY, just a passing word about Hoffman vehicle maintenance under the jurisdiction of Fleet Superintendent Fred Carlsen. Obviously, a beautiful fleet would be next to worthless if it did not run, and run well. The Hoffman fleet does both, including its 20-year-old orphan models, thanks to a top-flight PM and overhaul maintenance program.

END

(Please resume your reading on P. 56)



Everyday, more and more Service Stations and Garages are teaming up with SI-EN-TIF-IK Motor Reconditioner because its quality helps them gain new satisfied customers. SI-EN-TIF-IK works wonders in cars, trucks, diesels and tractors—quickly loosens and eliminates sludge, carbon and motor varnish, penetrates even the tight spots and leaves a coating of tough, high grade lubrication. This means new life, new power, new smoothness for old motors,—gentle break-in of *new* motors. SI-EN-TIF-IK's fine quality assures repeats—this steady business plus SI-EN-TIF-IK's long profit margin means plenty of extra profit for you.

DISTRIBUTORS: Some territories are still open for this rapidly expanding line—including Motor Reconditioner, Penetrating Oil, Brake Fluid, Metal Polish, "Fire Power", "Dynemix" and others. Write for additional information.



SI-EN-TIF-IK Quality products are sold on a money-back guarantee

SI-EN-TIF-IK PRODUCTS CO., INC.

2301 So. LaSalle Street • Chicago 16, Ill.

Soft Pressure does it



The *soft pressure* of Steel-Vent's light inner ring against the wall-contacting segments means *soft pressure* on the cylinder wall. And that means unusually long life for both.

That's why Hastings Steel-Vent "motor engineered" sets are so popular with fleets all over the country. No matter whether cylinder walls are worn and badly tapered or rebored or resleeved, you can bank on Steel-Vent for satisfactory performance and long life.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
Hastings Ltd., Toronto
U. S. PAT. 2,148,997

HERE'S PROOF THAT SOFT PRESSURE DOES IT IN REBORES, TOO

A trucking company, hauling logs over rough mountain roads, says: "We have used Hastings Steel-Vent Rings for the last five years and have never had a failure in the more than 900 jobs where this ring was used. Steel-Vent Rings are the most satisfactory installations we have ever found for both regular overhauls and rebored motors."



HASTINGS

STEEL-VENT PISTON RINGS

TOUGH *on oil-pumping*
GENTLE *on Cylinder Walls*

Heavy-Duty Maintenance

(CONTINUED FROM PAGE 73)

As equipment grows older and older, it eventually reaches a point similar to the predicament of the famous one-horse shay. There is nothing to be gained by replacing an engine if the frame is sagged beyond practical use. There is no use replacing a rear end if the front end is so decrepit that a few more miles may find the unit wrapped around a tree.

Hence, there comes a time in the life of even the best tractor when it either has to be replaced or rebuilt from the bottom side of the tire tread up. Then we turn to the base shops for complete tractor rebuilding, and we feel that when one of these jobs is finished it is ready for arduous service for another vehicle cycle life.

These overhauls are not all necessarily economical, but they have been serving a very useful purpose during the recent and present period of critical shortages. Time is also an important factor here, for it is possible for a battle-fatigued tractor to go in one end of the rebuild line and come out the other with a time lapse of less than one week.

Parts Supply Set-Up

THESE same two base shops also act as central supply depots for the entire system, stocking everything from cotter keys to complete frames. Of course, each of our terminal shops maintain a small stock of critically needed items and minor unit assemblies, but because of our centralized depots these field stocks are held to an absolute minimum.

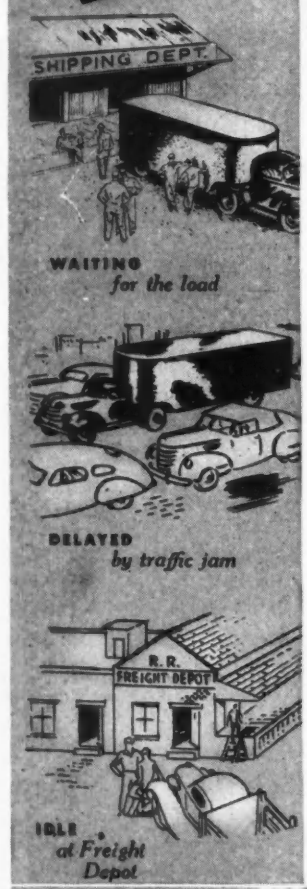
To bridge the gap between the depots and the outlying shops two terminals in the north, Syracuse and Buffalo, and three in the south, Baltimore, Roanoke and Burlington, have been designated as major stock points for both individual parts and reconditioned major and minor components. These stocks at widely diversified points, plus our own frequent freight service between all points, fills the need amply with a minimum of stock duplication.

Small Unit Rebuilding

AS PREVIOUSLY mentioned, three of our larger terminal shops are set up for small unit rebuilding. This work includes generators, starters, distributors, carburetors, fuel pumps, air compressors and voltage regulators. As the demand for these items

(TURN TO PAGE 116, PLEASE)

DELAYS and LOST TIME are the greatest "Headaches" in Truck Management



The Efficient Little Servis Recorder Shows 'em up . . . helps prevent 'em

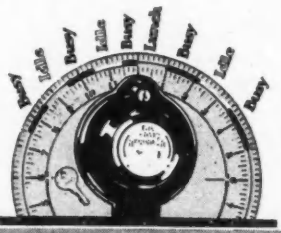
★"Our drivers know they can't cover up delays," says one truck operator, "because their *Servis Recorder* charts on my desk the next morning settle all arguments *before they begin!* An ounce of prevention, you know . . . "

Records All Idle Time

The Servis Recorder shows you every stop and delay—exactly when and how long—a complete report of all standing time for the truck—all day, and night, too.

It's All On The Chart

That little *Servis Recorder* chart is the greatest argument stopper—the driver doesn't have to take your word for it—he can see for himself that his truck *has "written" its own record.* Write us for the full story. The Service Recorder Co., 1375 Euclid Ave., Cleveland 15, Ohio.



The Servis Recorder
Tells Every Move Your Truck Makes

WHAT IS IT?



SLOGAN SELECTED FOR THE 1947 SAFETY CAMPAIGN OF THE AMERICAN TRUCKING ASSOCIATIONS, INC., IS...

- ☐ "ACCIDENTS JUST DON'T HAPPEN"
- ☐ "A SAFE TRIP EVERY TIME"
- ☐ "DEATH BEGINS AT 40"
- ☐ "SAFETY IS NO ACCIDENT"

Answer on P. 116

ATTENTION!

KRIEGER ALL STEEL Custom-Styled Vans

are now available through authorized dealers

ALL OVER AMERICA AND THE WORLD!

Truck-body builders throughout the country were eager to get Krieger franchises as soon as they learned about the Krieger All Steel Custom-Styled Van. And no wonder . . . this sensational van bids fair to revolutionize the business! Consider its 10 All Star Features and you'll see why old timers in the industry are saying, "This new Krieger development is the greatest thing in trucking since the self-starter!" So don't put off . . . visit your nearby Krieger dealer *today* and be impressed by its multiple advantages. (If you don't know your dealer's name, write us direct for the information.)

10 ALL STAR FEATURES

- ★ STRENGTH OF ALL STEEL CONSTRUCTION
- ★ SIMPLICITY OF INTERLOCKING SECTIONS
- ★ BEAUTY AND DURABILITY OF CUSTOM BODIES
- ★ HIGH-TENSILE STEEL FOR EXTRA STRENGTH
- ★ ALLOWS 20% TO 30% EXTRA PAYLOADS
- ★ AVAILABLE IN 12', 14', 16' LENGTHS
- ★ ALL STEEL TOP
- ★ EASES MAINTENANCE
- ★ CUTS REPAIR COSTS
- ★ DAMAGED SECTIONS QUICKLY REPLACEABLE

BUY RIGHT!
BUY THE BEST
BY KRIEGER!



KRIEGER STEEL SECTIONS, Inc.

11-11 34th Avenue • Long Island City, N. Y.

Heavy-Duty Maintenance

(CONTINUED FROM PAGE 114)

far exceeds the demand for major units such as engines, rear ends, etc., these additional facilities increase the supply and eliminate the need for long distance travel back to the major depots.

We replace fuel pumps automatically at 18,000 miles, generators and voltage regulators at 48,000 miles; and instruct all of our shop personnel to substitute other items freely if there is any doubt that they may cause a road failure. We believe it basic economy to replace a $2 to $10 item many times over rather than to take a chance of tying up a $100,000 load.

Date ____ 19____ Job No.____ Motor No.____ Type ____ Dyn. Mtr. No.____ Time Start ____ Finish ____ Lapsed ____

Carb. Settings Venturi____ Main____ By Pass____ Bleeder____ Idler____

CYLINDER NO.			1	2	3	4	5	6	7	8	AVERAGE		
COMPRESSION													
B. P. H.	TORQUE	VAC.	OIL TEMP.	OIL PRESS	WATER IN TEMP.	WATER OUT TEMP.	PER CENT COMPLY. COND.	ECONOMETER IN. SEC.	H.P.	H.P. PER LB. OF FUEL	BLOW BY CU. FT. PER MIN.		

Fig. 4. Form used in all dynamometer tests reveals full scope of operation

Trailer Repairs

FOR major trailer repairs, we again look to the base shops at Charlotte and Springfield, plus three auxiliary shops at Buffalo, Burlington and Baltimore. At the first two, special facilities including shot welders are installed to handle stainless steel, and trailers of this type are invariably routed there for major repairs.

All five can handle complete repairs on other types. Equipment includes ordinary gas and electric welders, a small metal-working shop, hydraulic jacking tools and trailer jigs.

At one of the shops, excellent results have been obtained through the use of a portable jig consisting of a massive I-beam, 32 ft. long and 12 in. thick. On one side, a reinforcing bar of 1-in. rod runs the entire length, welded at the ends and bowed out about a foot near the middle. By means of a turnbuckle in the rod,

(TURN TO PAGE 118, PLEASE)



Constant laboratory research backed up by 30 years experience in the manufacture of brake lining in both automotive and industrial fields keeps Grizzly constantly alert to developments resulting in finer brake lining. This same research and experience enables Grizzly to solve brake lining problems of widely divergent natures —helps keep Grizzly in its enviable position of one of the largest, most dependable producers of molded brake lining.

When you are confronted with a brake lining problem, follow the example set by other fleet operators and service managers—go to your nearest Grizzly Distributor or write Grizzly Manufacturing Company, Paulding, Ohio.



"Bear in Mind"... ask for

GRIZZLY
REG. U. S. PAT. OFF.
BRAKE LINING

● WHAT IS IT?

ANSWER... (To Question on P. 114)

"Safety is No Accident," submitted by H. L. Halverson of St. Paul, Minn.

(Another Cartoon Quiz is on P. 118)



COMING YOUR WAY...THIS FAMOUS LINE OF HAND TOOLS IN SENSATIONAL···

New Design

The new OVAL designing of New Britain Drive Parts throws out the useless bulk in old, round shapes and adds material where it is really needed—in the direction of strain! Extraordinary strength has been packed into slim, streamlined Handles with palm-fitted grips that are a revelation in "feel" and utility. Also coming, are bulk-free heads on modern Ratchets of startling reduced weight but amazing turning power, plus sure-action simplicity...you'll have new-day, precision balanced Screw Drivers and rugged Box and Open End Wrenches that breeze with ease through the toughest jobs in the tightest corners. Here, indeed, are Mechanics Hand Tools that make money! The New Britain Machine Co., New Britain, Conn.



New Britain

GREATER STRENGTH · BETTER FIT **HAND TOOLS**

Heavy-Duty Maintenance

(CONTINUED FROM PAGE 116)

the I-beam may be kept exactly true for any strain which trailer straightening may impose. The device also may be used for either vertical or horizontal bracing. Other shops use the more conventional built-in jigs.

The great preponderance of our newer trailers are either stainless or aluminum, with a definite trend at present toward the latter because of lesser maintenance problems. For both these types, extruded shapes are available which makes repairs or even original fabrication, in larger part, a matter of assembly.

Trailer Maintenance

WE CONSIDER trailer maintenance as an entirely separate subject from trailer repairs, and lay special emphasis on this phase of maintenance. It is an adage as old as the industry that trailers are the direct responsibility of no one. But it has been our mission to make them the responsibility of every one. To accomplish this objective, we have set up two inspection systems for trailers; one on a day-to-day basis, the other at three-month intervals.

The daily inspection is modified to consider the physical limitations of certain shops. Approximately half the shops in each division are charged with responsibility of this check on long-line equipment, thus catching each trailer at two-day intervals. Other shops inspect local equipment on a weekly basis. The check includes the following points:

Check lights and replace all defective bulbs and bulb bodies. Replace defective reflectors. Replace defective receptacles. Replace damaged junction boxes with permanent fastenings. Repair and replace temporary and defective wiring. Break emergency cock and check emergency relay valves for operation. Check axle alignment and springs for breakage. Lubricate, as needed, landing gear, brake diaphragm linkage and cams, spring pins and shackles. (This "as needed" feature is an important innovation. We have found that all trailer lube points are clearly visible and that this is the best way of telling whether lubrication is needed or not. No record is kept.) Inspect for sill and sub-frame fractures. Replace tires whose apparent condition indicates probable failure en route. Tighten lug nuts. Drain air

(TURN TO PAGE 121, PLEASE)

SAME BASIC DESIGN

for Every Installation

This important feature of the Hendrickson Tandem has long been a first consideration of Hendrickson design. Starting with Model T-186, rated at 22,000 lbs.—our range extends through 8 sizes to Model T-600 with a rated capacity of 60,000 lbs. . . . every model has the *same basic design.*

Within this range there is an exact size to do your job best—no "over-design" to add excessive weight—no "light-weight" design to add maintenance risks.

CONDENSED SPECIFICATIONS

Unit Model	*Rated Capacity*	*Axle Spacing*	*Recommended Tire Size*	*Spring Size*
T-186	22,000 lbs.	40"	8.25 x 20	3" x 32½", 11-7/16" Lvs.
T-246	26,000 lbs.	46"	9.00 x 20	3" x 32½", 12-7/16" Lvs.
T-248	26,000 lbs.	48"	9.00 x 20	3" x 32½", 12-7/16" Lvs.
T-260	26,000 lbs.	44"	9.00 x 20	3" x 32½", 12-7/16" Lvs.
T-320	32,000 lbs.	48"	10.00 x 20	4" x 36½", 12-7/16" Lvs.
T-360	36,000 lbs.	48"	11.00 x 20	4" x 36½", 10-½" Lvs. 2-5/8" Lvs.
T-420	42,000 lbs.	48"	12.00 x 20	4" x 36½", 12-½" Lvs.
T-600	60,000 lbs.	54"	14.00 x 24	4" x 40½", 12-5/8" Lvs.



HENDRICKSON MOTOR TRUCK COMPANY
Wabash Avenue at 36th Street
CHICAGO 15, ILLINOIS

"Follow the Leader"



"The Spirit of Transportation"

by
F. LUIS MORA

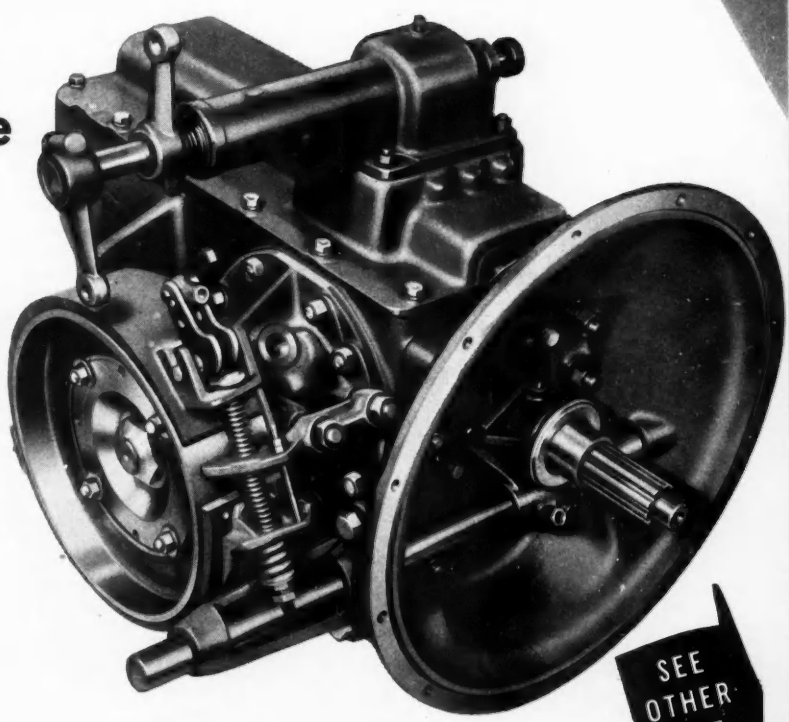
From a collection of twelve original interpretations for Clark Equipment Company by leading American artists.



The CLARK TRANSMISSION

proved veteran of automotive revenue transportation

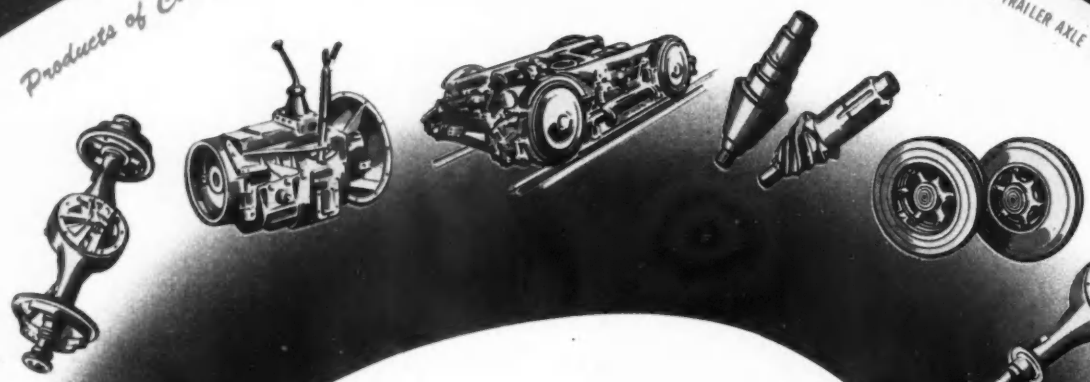
When you see this dependable unit named in the specifications of Farm Tractors, Trucks and Buses, you can tell with certainty that its builders had fine quality in mind.



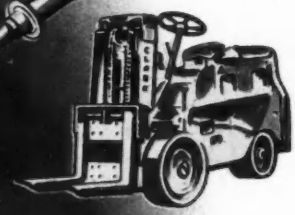
SEE OTHER SIDE

ANOTHER PRODUCT OF CLARK EQUIPMENT COMPANY

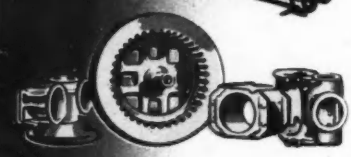
Products of Clark- RAILWAY CAR TRUCKS • AXLE HOUSINGS • FRONT AND REAR AXLES FOR TRUCKS AND BUSES • EASY ROLL TRAILER AXLE • TRANSMISSIONS • INDUSTRIAL TRUCKS AND TRACTORS • METAL SPOKE WHEELS • RIVETING PROCESS • DRILLS AND REAMERS • GEARS AND FORGINGS • ELECTRIC STEEL CASTINGS

















YOU TAKE THIS ONE

FOR GRANTED It's compact, light in weight . . . yet its gears, shafts and bearings are all generously sized to provide ample reserve strength for severe conditions.

It shifts easily and quietly . . . a smoothness assured by proper tooth design, precision spline fits and long hubs on sliding members.

In short it's the kind of trustworthy unit you take for granted . . . a credit to the man who builds the vehicle and a comfort to the man who operates it.

A line of transmissions to fit most requirements.

Ask Clark engineers.





Prices on CLARK products will no
advanced in excess of increased c

CLARK EQUIPMENT COMPANY

BUCHANAN, MICHIGAN

OTHER PLANTS — BATTLE CREEK, JACKSON, BERRIEN SPRINGS, MICHIGAN

Heavy-Duty Maintenance

(CONTINUED FROM PAGE 118)

tank and chalk date on tank. Repeat after chalked date indicates a two weeks lapse.

As many of these items are also included in the daily "fast-line" inspection for all shops, those items are handled on an absolute daily basis.

The three month inspection, executed by all shops, includes all items listed above, plus the following:

Tighten spring U-bolts and clips. Inspect air lines for leaks, chafes and need for reclipping. Clean emergency relay valve and examine bolt fastenings. If booster brake system, lubricate booster and linkage. Remove wheels, reline if necessary, lubricate anchor pins, check drums for need of replacement, check bearings and replace if necessary, replace any defective seals.

Reports of trailer inspection completions are forwarded to the divisional offices for permanent record in the same manner in which power-unit inspections are recorded.

Battery Rebuilding

BECAUSE we have our own battery rebuilding shops at Springfield and Burlington, we have found it economical to use one 12-volt rather than two 6-volt units (with one exception). These are virtually standardized throughout the system, except for small local trucks.

With generators and voltage regulators under constant check in regular inspections, we figure that when a 12-volt battery or a group of four 6-volt batteries fail there is only one thing to do—ship it to the nearest rebuilding shop for complete renovation.

Painting

THE final phase of our specialized maintenance, a matter of painting, is accomplished in an unspectacular but efficient manner by four shops designated for this purpose. As the majority of our trailers are stainless or aluminum and use no paint, this activity is held to a bare minimum.

Round, Associated Transport enameled steel disks are bolted to the front, rear and sides of the trailer or truck body following body repairs. This feature, plus decals for the cab doors and stencils for the front bumper and vehicle numbers eliminates any need for sign painters.

(Tire maintenance, the concluding article in this series by Mr. Gearwar, will appear in the May issue—The Editor.)

END

(Please resume your reading on P. 74)

GAS CONSUMPTION AT PEAK

Motor vehicle operators in the United States consumed an estimated 25.2 billion gallons of gasoline in 1946 to set a new all time high record, according to figures released by the Public Roads Administration. Estimated state receipts from gasoline taxes in 1946 amounted to $1,025,000,000.

● WHO SAID IT?

ANSWER . . . (To Question on P. 118)

Henry J. Kaiser

(Another Cartoon Quiz is on P. 122)



THE "GUNITE LINE" NOW INCLUDES

DUAL TRAILER WHEELS

In 20" size to fit Timken 11000, 13000, 15000, 17000, and 18000 pound axles. Additional sizes are being added as rapidly as expanding production facilities permit.

TRUCK WHEELS

In 20" size to fit Timken 32,500 and 35,000 front axles and Timken Q and R drive axles. Fronts, malleable iron. Additional sizes coming.

DUAL CONVERSION WHEELS

In 20" size for 1½ and 2-ton trucks, to replace dual disc wheels and permit use of tires up to 10.00/20.

MADE BY
GUNITE FOUNDRIES
ROCKFORD, ILLINOIS



GUNITE CAST STEEL WHEELS . . . GUNITE BRAKE DRUMS . . . FOR LONGER LIFE

Production Line Methods

(CONTINUED FROM PAGE 42)

service floor at the east end of the building.

Units to be removed from service for scheduled maintenance or major overhaul, are shifted to the area in which the type of work scheduled is performed.

If extensive engine or chassis repair is scheduled, the unit receives a complete steam cleaning on the paved outside washrack adjacent to the parts cleaning room. This washrack is located at the center-south side.

The parts cleaning room is provided 165 lb. steam pressure, with hot and cold water, and steam mixing valves. The room also contains hot and cold solution, and vapor cleaning equipment. This room is lighted with four explosive-proof 200 watt light fixtures. An overhead circular track and chain hoist eliminates all manual lifting.

Engines, transmissions, differentials and smaller parts are taken to the steam cleaning room before being dismantled. Metal wire baskets are provided for cleaning small parts.



Tire shop with hot plate, left, and pedestal mounted tire spreader at right

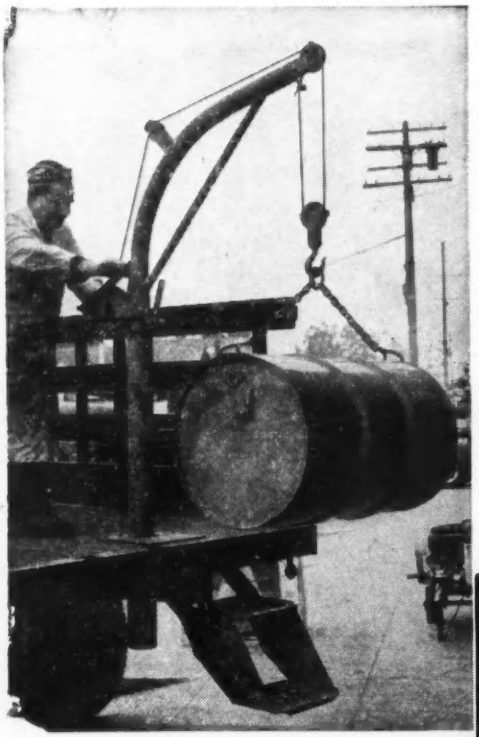
Tire Program

THE tire room joins the steam cleaning room on the west and opens onto the main greasing and servicing floor area. The tire room has full equipment for all inspecting and service except recapping which is handled by local firms.

Individual card records are kept on each tire and from these record cards accurate daily information is available as to mileage, service, and repair.

We have found our complete tire record for the more than 800 running wheels of great value to us in marking out our "Move-down" tire program, which begins with air pressure checks and reports and carries through to include continuous unit tire matching.

(TURN TO PAGE 124, PLEASE)



Speed up TRUCK LOADING AND UNLOADING

BLUE HERON CRANES

Now your driver can handle up to 1 ton without a helper!

Blue Heron Truck Cranes save loading and unloading time, help prevent accidents, save cost of sending helpers to handle heavy loads. Ideal for handling engines, transmissions, differentials, large tires, drums, transformers, castings, and heavy parts and materials.

Sturdily built with large margin of safety...two points of bearing, a radial ball bearing at base of standpipe and a bronze bearing pressed into the upper end of standpipe...friction brake for lowering load safely and quickly ... high gear ratio...rachet pawl lock ... load can be swung in full circle.

Blue Heron Cranes can be attached to any truck and are easily and quickly removed from socket, leaving truck bed clear. Many fleet operators equip all trucks with sockets which allows easy transfer of crane. Write for new illustrated folder showing how others are saving time and money with Blue Heron Cranes.

500 lb. Capacity	Half-Ton Capacity	One-Ton Capacity
$79.50	$128.00	$252.50

Full Freight Allowed. Order from your Jobber.

CAM TOOL CO., INC. 288 - 21st Street Oakland 12, California

WHO INVENTED IT?



THE SNEEZER ON A DIESEL ENGINE ELIMINATES OBJECTIONABLE SMOKE FROM THE EXHAUST. IT WAS INVENTED BY...

- ☐ DR. RUDOLPH DIESEL
- ☐ CLESSIE L. CUMMINS
- ☐ C. F. KETTERING
- ☐ ARTHUR HERRINGTON

Answer on P. 124



TAKE A TIP FROM ONE WHO SPEAKS FROM EXPERIENCE

For Better Brakes..

RELINE

with Genuine

WAGNER CoMaX BRAKE LINING



Wagner CoMaX is the brake lining that's built for *all* applications. It bears the name Wagner—a pioneer manufacturer of hydraulic brakes—and is unsurpassed for long-wearing quality and for quick, safe, smooth stops. Wagner *knows* the requirements of good brake lining and has designed CoMaX to give the ultimate in satisfactory service.

The CoMaX line offers *complete* coverage for all hydraulic brakes, and is available in sets, rolls, blocks and slabs. Consult your nearest jobber or write us.

Wagner Electric Corporation
6470 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.



LOCKHEED HYDRAULIC BRAKE PARTS and FLUID · NoRol
CoMaX BRAKE LINING · AIR BRAKES · TACHOGRAPHS
ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

B47-2

Production Line Methods

(CONTINUED FROM PAGE 122)

Our per tire carcass mileage is well in excess of 100,000 miles. Carcasses which have been recapped many times are finally run-out on equipment that has been intentionally provided with oversized tires.

The practice of obtaining maximum mileage by progressively moving the new tire down from heavy service to intentional oversized installation is the key to our "Move-down" program. When tires are no longer fit for recap or repair, they are marked "Run-out" and placed in a location where maximum remaining life can be obtained. Our tire cost per mile is 2.26 cents.

Major Overhauls

DEAD work is shifted to stalls adjacent to the machine section. Component parts to be worked on are removed and sent to the parts cleaning room, as mentioned before. After being cleaned they are returned to the machine section, where they are dismantled and reconditioned.

We use the unit overhaul system in order to expedite return of equipment to service. At all times we keep on hand a large stock of reconditioned engines, transmissions, rear end parts, air compressors, generators, starters, and minor accessories which can be substituted immediately.

This system cuts overhaul time from days to a matter of hours.

At the present time our repairs to equipment cost is running 3.91 cents per mile and we are operating in excess of 300,000 miles per month with the 170 units. This figure, we believe, is considerably lower than the average for similar operations. However, the savings is not the important factor. Our main job is to keep every piece of equipment rolling with the least possible number of out-of-service hours.

Body Repairs

THE body shop, which is located on the north side of the building, midway back, is equipped with complete sheet metal and woodworking machinery. As most of our bodies are of aluminum construction, it is necessary to keep on hand an extensive supply of aluminum material.

Major equipment in the sheet metal section of the body shop consists of a sheet metal brake, large drill presses, forming press, forming rolls, pneumatic hammers and riveting guns, all sizes of electric drills and sanders and frame straightening equipment.

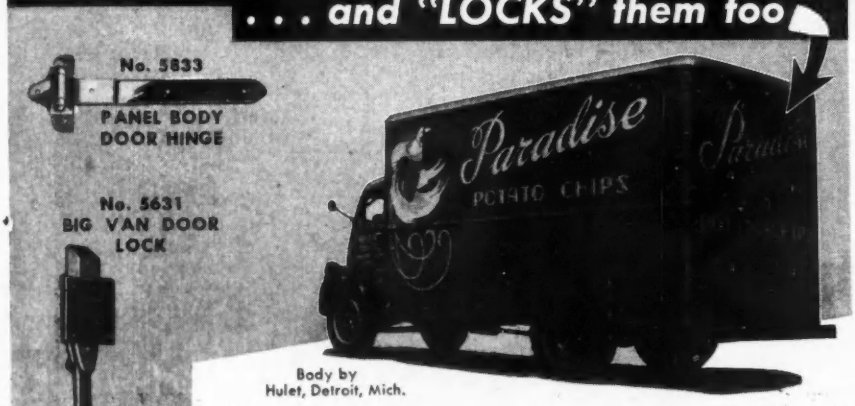
We have three large I-beams imbedded in the floor to which bent

(TURN TO PAGE 126, PLEASE)

EBERHARD

"Hinges" the Doors to *Paradise*

. . . and "LOCKS" them too



Figuratively speaking, of course.

Being a keen judge of quality truck body fittings, this Detroit body builder selected sturdy Eberhard No. 5833 Panel Body Door Hinges to swing doors open to the cargo and the Eberhard No. 5631 Big Van Door Lock to fasten doors securely at top, bottom and center to protect the cargo.

Practical design, rugged construction and smooth operation have gained national acceptance of the complete Eberhard line of truck body fittings.

EBERHARD *Long Run*
TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.

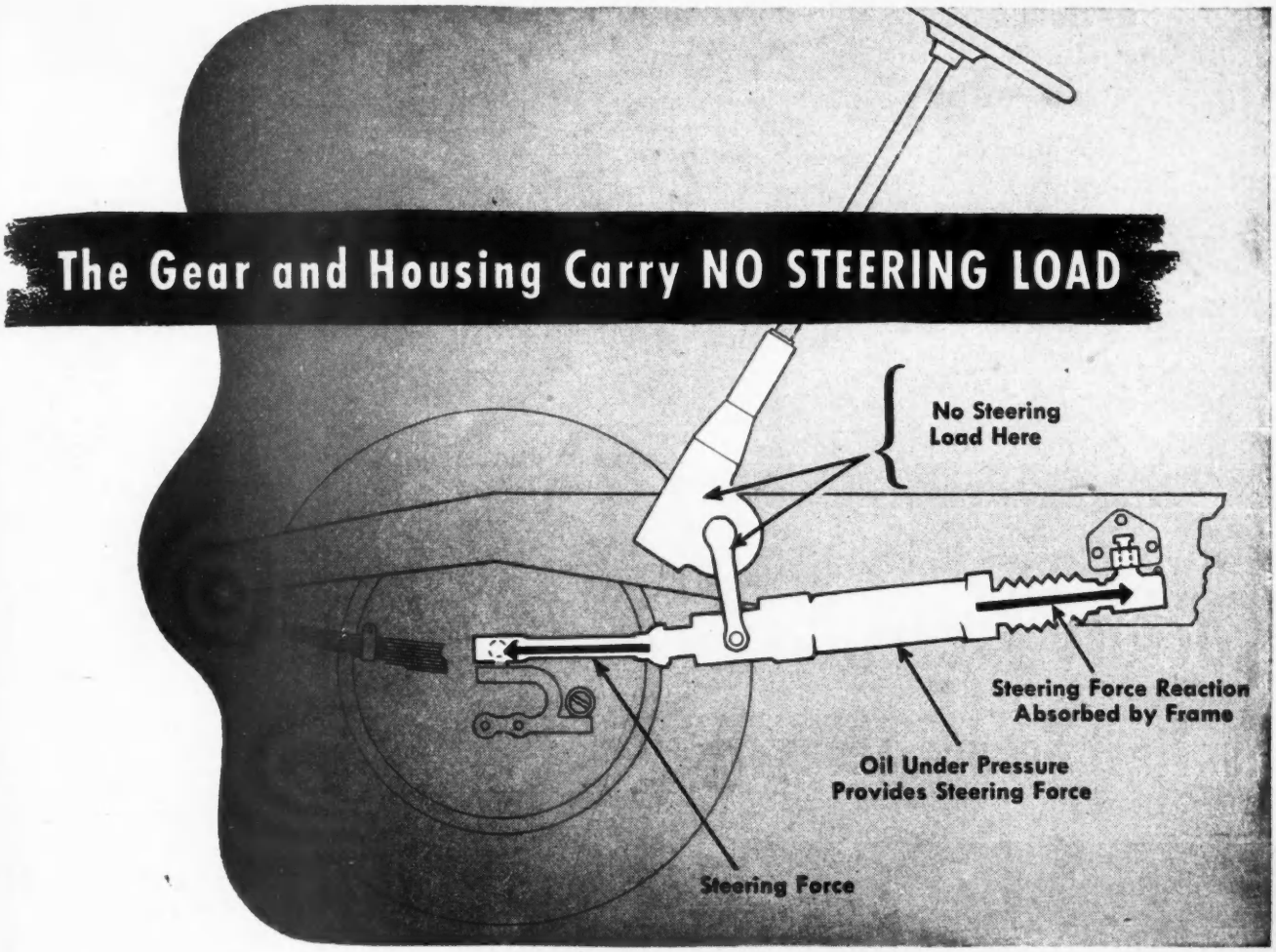
Division of the Eastern Malleable Iron Co. 2734 TENNYSON ROAD CLEVELAND, OHIO

● WHO INVENTED IT?

ANSWER . . . (To Question on P. 122)

Clessie L. (Cap) Cummins. The "Sneezer" is a small stainless steel device resembling a bottle open at the big end. It screws into the center of the piston head, trapping red hot air on the compression stroke and letting it out on the power stroke. This blows the oil clinging to the injector well down into the cylinder, where it is burned.

(Another Cartoon Quiz is on P. 126)

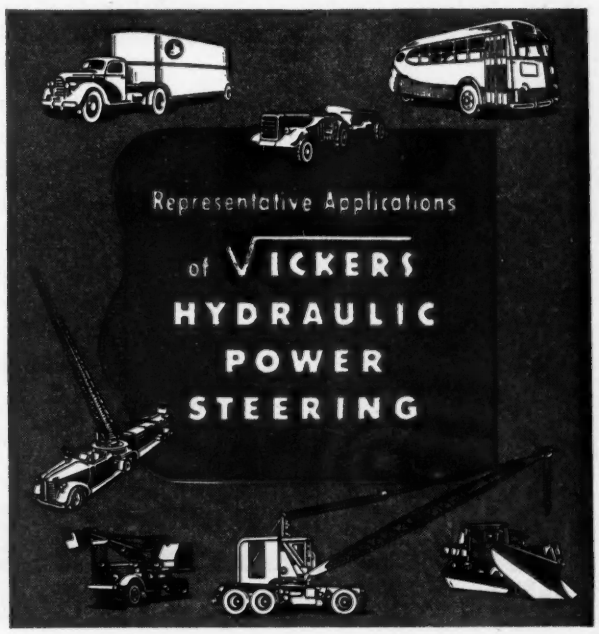


With VICKERS

HYDRAULIC POWER STEERING

Neither steering load nor road shock can reach the steering gear and housing when Vickers Hydraulic Power Steering is used. All the steering load is carried by the hydraulic cylinder, and road shocks are transmitted to the frame. The Vickers booster unit is controlled by the pitman arm and actuates the drag link directly. Direct application of power assures protection against wear or failure in the steering gear proper—makes it possible to use a lighter, more economical gear and housing with complete safety.

There are many other advantages of effortless Vickers Hydraulic Power Steering. Ask for Bulletin 44-30 which contains complete information.



VICKERS Incorporated
1418 OAKMAN BLVD. • DETROIT 32, MICHIGAN

Application Engineering Offices: CHICAGO • CINCINNATI • CLEVELAND • DETROIT
LOS ANGELES • NEWARK • PHILADELPHIA • ROCHESTER • ROCKFORD
TULSA • WORCESTER

Production Line Methods

(CONTINUED FROM PAGE 124)

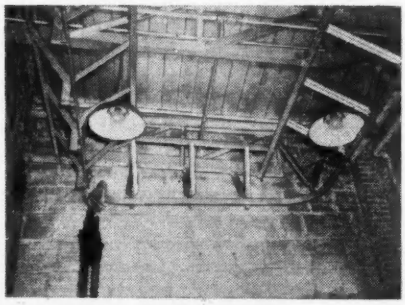
frames can be anchored and straightened with hydraulic jacks. This equipment is set up so that we can take out a frame deflection down to 1/8 in.

Major equipment in the woodworking section consists of a 36-in. band saw, a circular saw, and planer. We also have stationary emery wheels and other smaller equipment.

Our upholstering shop is on a mezzanine balcony above the body shop office, and is equipped with electric upholstering machines and other necessary machinery for doing a complete upholstering job. We make and repair all our own tarpaulins in this shop.

Paint Shop

THE paint shop, which is 50 x 18 ft., is 100 per cent air tight, with a large overhead skylight. When painting is in progress, fresh air is drawn into the room through glass filters installed along the partition wall, 12 ft. from the floor. The fresh air is drawn through these filters by a Sirocco type suction fan driven by a 2 hp. motor installed on the roof.



Explosion proof lights, circular track and overhead crane are installed in parts cleaning room

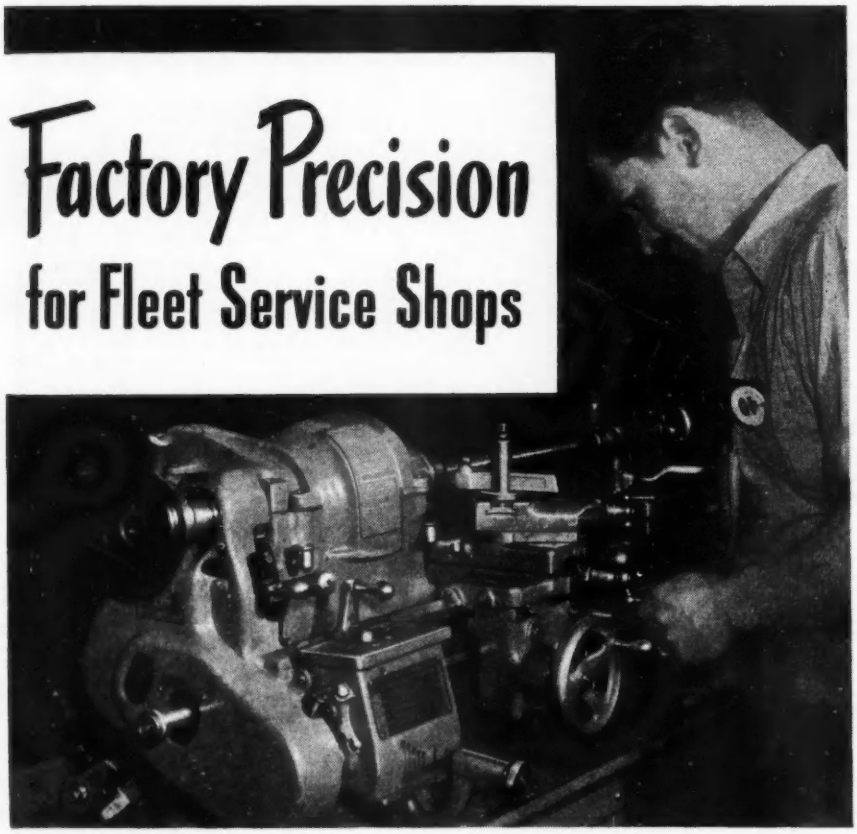
This air passes down over the work and is withdrawn from the room with the paint fumes through a trench which runs the full length of the center of the room. This trench is provided with grated openings. Fumes are drawn from the trench into an exhaust duct and out through the fan on the roof.

With this setup, as many as three paint guns can be used at one time without the necessity of workers wearing masks.

The room is equipped with infrared paint drying lamps, new type explosion proof power receptacles, and an automatic room temperature control.

(TURN TO PAGE 128, PLEASE)

Factory Precision for Fleet Service Shops





THIS CATALOG FREE!
Illustrates and describes South Bend Engine Lathes and Toolroom Lathes with 9" to 16" swings, Turret Lathes with 1/2" and 1" collet capacities, attachments, and accessories. Gives complete specifications. Write for it today. Sixty-four pages, size 11" x 8-1/2".

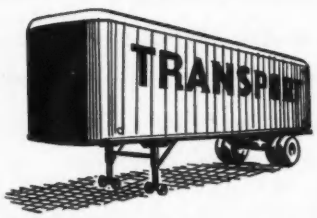
Fleet maintenance and repair work requires the same precision that is essential in the manufacture of the original equipment. South Bend Precision Lathes, widely used in the basic automotive and parts manufacturing industries, are logical, practical lathes for the fleet service shop. They handle with ease, speed, and factory efficiency and economy, the multitude of machining operations which are necessary in this work. A complete line of attachments increases their usefulness. Substantial savings can result from their installation.

LATHE BUILDERS SINCE 1906

SOUTH BEND LATHE WORKS

445 E. Madison St., South Bend 22, Indiana

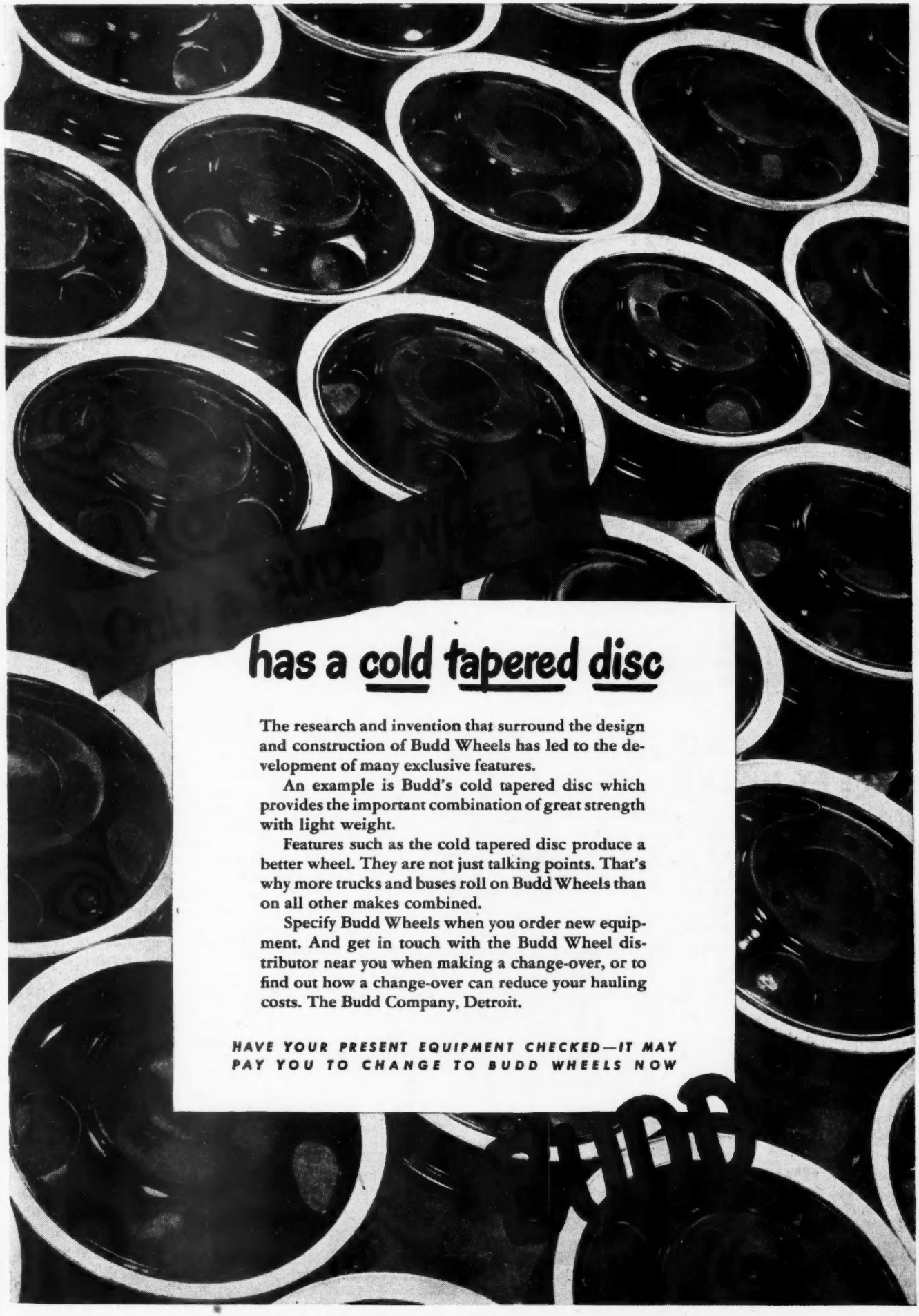
WHAT ARE THEY?



THE LITTLE FOLDING WHEELS UNDER THE FRONT OF A SEMI-TRAILER ARE KNOWN AS...

- ☐ DOLLIES
- ☐ TRUCKS
- ☐ LORRIES
- ☐ SIXTH WHEELS

Answer on P. 128



has a cold tapered disc

The research and invention that surround the design and construction of Budd Wheels has led to the development of many exclusive features.

An example is Budd's cold tapered disc which provides the important combination of great strength with light weight.

Features such as the cold tapered disc produce a better wheel. They are not just talking points. That's why more trucks and buses roll on Budd Wheels than on all other makes combined.

Specify Budd Wheels when you order new equipment. And get in touch with the Budd Wheel distributor near you when making a change-over, or to find out how a change-over can reduce your hauling costs. The Budd Company, Detroit.

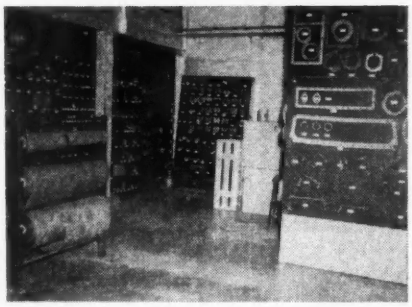
HAVE YOUR PRESENT EQUIPMENT CHECKED—IT MAY PAY YOU TO CHANGE TO BUDD WHEELS NOW

Production Line Methods

(CONTINUED FROM PAGE 126)

Machine Shop

OUR machine shop is contained in a wire mesh enclosure, and joins the main office and storeroom. Major machine shop equipment consists of two metal working lathes (one electric and one an air test bench), a 6-in. and a 10-in. emery wheel, a boring bar, both large and small drill presses, a bearing boring bar, a diesel fuel pump test stand, radiator repair tank, full electric welding equipment, pin hone, a 60-ton hydraulic press, and a complete supply of small tools and equipment.



General view of well-stocked parts room

New Setup Reduces Cost

WITH our new setup, our average overall equipment maintenance and garage expense, including tires, is running 8.045 per mile. This shows a reduction since mid-1946. With the full use of our new garage and extended facilities, we expect to substantially reduce this figure again within the next six months.

END

(Please resume your reading on P. 43)

A Positive Nuisance—

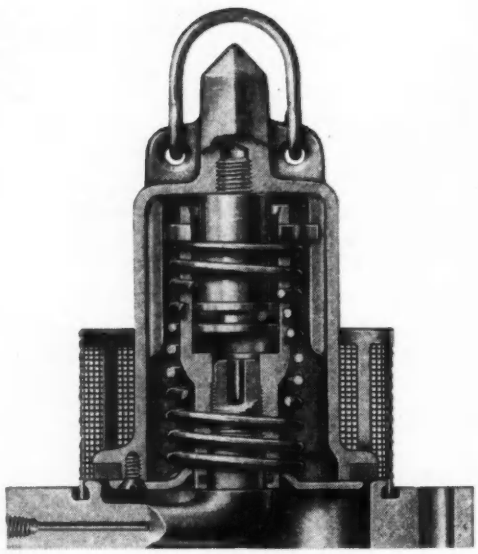


A leaking valve!

In the still of the night, in your own home, in the bathroom or the kitchen sink, can you think of anything more annoying than a leaking valve? Drip, drip, drip—not enough water being wasted to even turn the water meter. No harm being done. No one being injured. Yet it keeps you awake. Finally you get up and shut the valve tightly, firmly resolved to put in a new washer tomorrow or have your wife call the plumber.

TIGHTLY SEATED SAFETY VALVE

With an Internal Safety Valve for a gasoline truck tank, a leaking valve is something different. It is wasting valuable liquid. It is courting disaster. It's more than a nuisance—it's downright DANGEROUS. To be really safe, a safety valve, properly installed, must never dribble. The sectional view of our Model MS valve shows how we employ a special seat to insure a gasoline-tight joint. Just a little thing, but very important to you.



SHAND & JURS CO.
BERKELEY, CALIFORNIA
New York Chicago Houston Los Angeles Seattle

S&J

SHAND & JURS

Davey Power Take-Offs

LARGE scale production will be begun in 1947 on eight standard models of Davey Heavy Duty Power Take-offs by the Davey Compressor Co., Kent, Ohio. A new Truck Equipment Division will have the responsibility of contacting truck and equipment manufacturers and acquainting them with the widespread possibilities of employing power take-offs instead of separate auxiliary engines.

The Davey Power Take-off uses, as its basic principle, an internal and external gear drive, operating as a strong and durable spline (rather than the series of rotating or meshing gears found in transmission type take-offs). Installation is made to the rear of the truck transmission case. The power take-off then becomes an integral part of the drive shaft assembly for transmitting power direct from the truck engine either through V belts or chain drive.

The eight power take-offs are available in three separate capacities—50, 75 and 100 h.p., so designated because of the horsepower which they transmit.

The Model 50 power take-off is manufactured in both single and simultaneous drive designs. The latter permits operation of truck, or individual operation of driven equipment, or of both simultaneously.

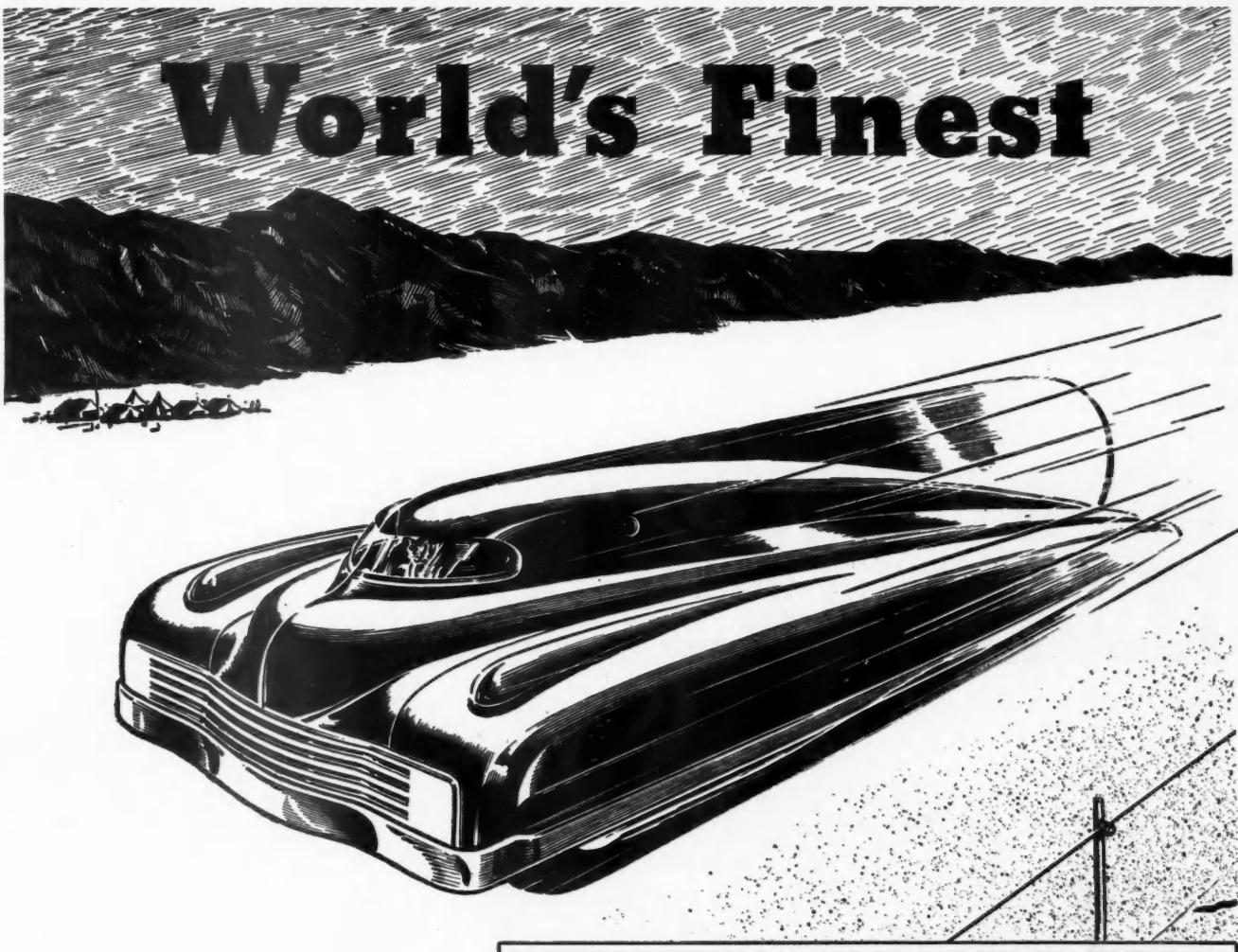
The new Models 75 and 100 are manufactured for single drive, simultaneous drive and also for double drive. With double drive take-offs, the truck may be operated alone; either of two pieces of driven equipment may be operated individually, or both pieces of driven equipment may operate simultaneously.

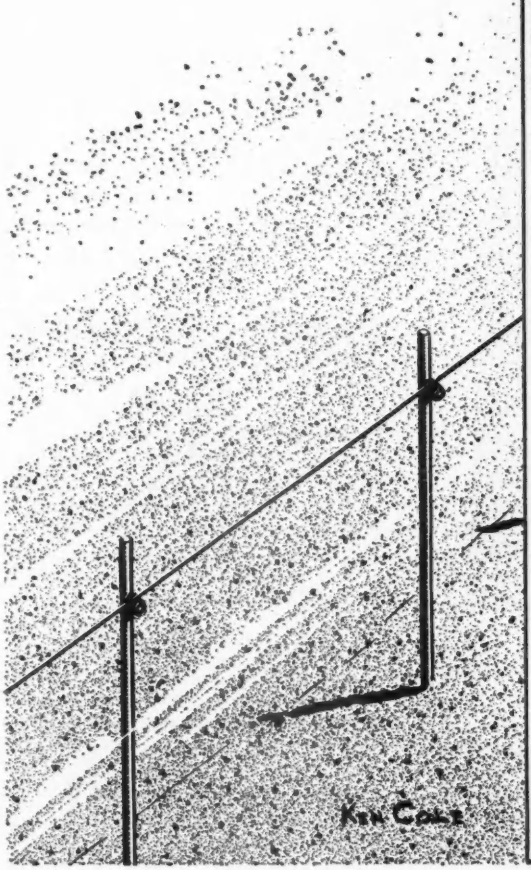
● WHAT ARE THEY?

ANSWER . . . (To Question on P. 126)

The front supports for a semi-trailer, used when it is not coupled to a tractor, are called "dollies."

(Another Quiz Cartoon is on P. 130)





Bonneville (Utah) Salt Flats, internationally famous automobile speedway, where the World's Record of 369.7 m.p.h. was made in 1939—a perfectly flat and level area of glistening salt, 20 miles long and five miles wide. The speedway, over 92% soluble salt, is five feet deep in places, and is extremely porous, though very hard. Except for a few inches of the upper crust, the flats are saturated with brine, which has a cooling effect on racing tires. Of all areas in the world where automotive speed may be put to the most extreme test, the Bonneville Salt Flats are unquestionably, World's Finest.

And there are no finer automotive parts in all the world than

Genuine TOLEDO

For almost a half century Toledo parts have been proving their exceptional worth from Coast to Coast in every type of automotive vehicle. So it is no wonder that thousands of "America's Men Who Know Motors" continue to specify Toledo. For parts from Toledo's factories, which are standard equipment in so many new cars, trucks, buses and tractors, lead the field in replacement preference.

The TOLEDO

STEEL PRODUCTS COMPANY • TOLEDO, OHIO, U. S. A.
SINCE 1906
Makers of Fine Automotive and Aircraft Parts

Protective Undercoaters

(CONTINUED FROM PAGE 69)

car up to 150 lb. for the 30 ft. trailer. As all of this weight is added well below the center of gravity and equally distributed over all wheels, it actually improves the ride. The only possible disadvantage would be in the case of a vehicle tightly crowding its legal g.v.w. limit, and it would have to crowd it mighty tight at that.

Application Is Simple

SPRAYING technique for the undercoater is much simpler than for regular painting because there is no back spray and because pile-up does no more than waste a little of the product.

As in the case of all finishing, the surface must be free of dirt, moisture and grease, although previous layers of paint have no effect one way or the other. This means that the process can be used most advantageously when the vehicle is new. But it does not mean that it cannot be used equally effectively on older vehicles. In the latter case, however, cleaning time must be added. Steam, of course, is the desirable medium although degreasing chemicals, plus pressure wash and the inevitable wire brush, can do a satisfactory job.

For best results finished metal such as fender and running board edges should be masked—preferably with tape and a hanging apron of paper. Some applicators have successfully short-cut this process by coating these surfaces with heavy greases which may be wiped off along with any overspray after the job is done. In addition, all underbody grease fittings should be masked together with drain openings under flywheel housings. This is particularly true in the case of the small hole fitted with cotter pin found on nearly all model Ford vehicles.

Before undercoating, it is a very good idea to tighten all body bolts and other fittings, since the unusual property of the undercoater tends to hold it tight long after the unprotected bolts would work loose. The better the elasticity of the product the better it will do this job. This, incidentally, is an important added attraction and the question of whether this would be a serious factor in the case of maintenance operations required at a later date is answered by the manufacturers in short order. The undercoater, they say, may be scraped off quickly at any time with a putty knife, and the protected bolt, free

(TURN TO PAGE 132, PLEASE)

DUAL DRIVE POWER FOR CONCRETE MIXERS



The Fabco Dual Drive with power selector, applied to standard, production model, medium duty trucks, is just tailored to the needs of transporting "ready mix".

On the highway, the truck rolls along on power applied to the forward driving axle only, the second driving axle is disengaged and "free wheels".

At the job, where additional traction is necessary, the driver employs dual drive, and underdrive reverse, if necessary, and dumps the load directly into the forms.

If you are in the construction business, you'll be interested in writing for a copy of our new FABCO DUAL DRIVE bulletin.

Fabco 26 Years in this Business

F. A. B. MANUFACTURING CO.

1249 SIXTY-SEVENTH STREET · OAKLAND 8, CALIFORNIA

Dual Drives · 6 and 10 Wheel Units · Logging and Highway Trailers · Frame Extensions

WHEN WAS IT?



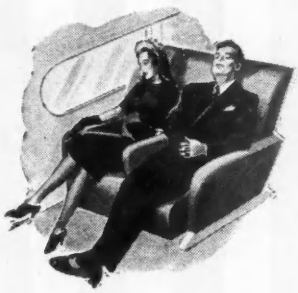
THE STARTLING ADMISSION THAT AUTOMOTIVE TRANSPORTATION IS HERE TO STAY WAS MADE BY THE NATIONAL TRANSPORTATION COMMITTEE IN ...

☐ 1902 ☐ 1922
☐ 1912 ☐ 1932

Answer on P. 132

UNITED STATES RUBBER COMPANY

SERVING THROUGH SCIENCE

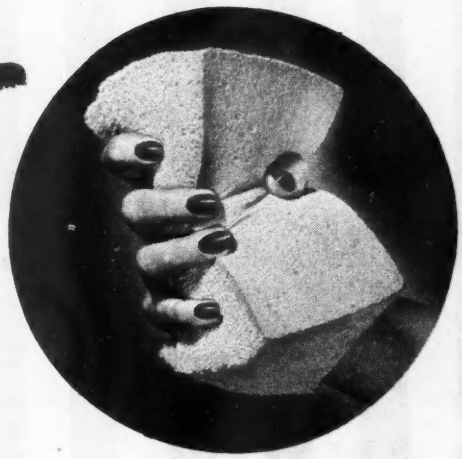




Wherever comfort counts



put



U.S. Koylon FOAM

REG. U.S. PAT. OFF.

IF COMFORT counts—count on making more friends, *and sales,* with Koylon Foam. For this wonder material—proved by 12 years of testing—provides *matchless comfort* for sitting or sleeping!

Koylon meets every requirement for the kind of comfort people want in the way you can provide it best . . . easily, economically and permanently. From homes to hotels . . . from automobiles to trains and planes, wherever people sit or sleep, *it pays to specify Koylon Foam.*

Buoyant Comfort	*Air, captured in millions of tiny latex cells, is put to work for comfort.*
Resilient	*Responds to a finger touch—yet supports a "heavyweight" with ease.*
Clean	*It "breathes" fresh air! Odorless. Vermin-proof. Washable with plain soap and water.*
Sag-Proof	*Keeps up in appearance as well as in comfort. Needs no fluffing. Never mats, sags or bulges.*
Long-Wearing	*12 years of testing on major railroads prove Koylon can take wear.*

U. S. Koylon Foam Division, Mishawaka, Indiana

Protective Undercoaters

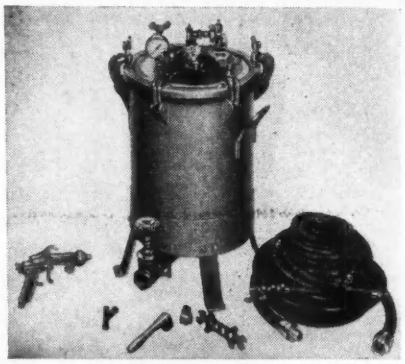
(CONTINUED FROM PAGE 130)

from rust of any kind, may be loosened easier and faster than if it had not been protected. And when a fender needs hammering, the product can be scraped off still faster by first applying heat from a blow torch for a few seconds to the outside of the panel.

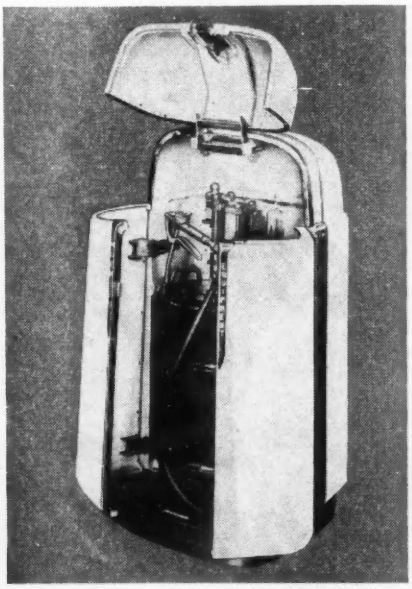
Spraying is directed to all underbody surfaces including floors, frames, axles and fenders but with the exclusion of these specific items, which need not be masked, since a little spray can do no harm, oil pan, open driveshaft and universals, clutch housing on hydromatic or vacuumatic types, brake drums, leaf springs, muffler and tail pipe. Undercoaters may be cut with naphtha or kerosene which takes care of the small spillage or overspray problem very nicely.

A word of caution should be inserted with regard to the inflammable characteristics of the material. In liquid form, as applied, it is definitely inflammable and recautions should include the "no smoking" sign, and engines should not be started for two hours if spray is used in or near the engine compartment. But once dry, the material definitely is not inflammable, even acts as an effective fire stop.

(TURN TO PAGE 134, PLEASE)



Pressure tank is one type of recommended equipment. (this one, DeVilbiss)



Pump which fits original container may also be used (this one, Alemite)



PAY DIVIDENDS

in time saving

DON'T LET "lazy air" steal labor time. Replace your old, worn-out unit with a new, efficient Wayne. No time is lost waiting for pressure to build up when you install a compressor big enough for your requirements. Write for complete line catalog.

THE WAYNE PUMP CO., FORT WAYNE 4, INDIANA



for your protection

WAYNE AIR COMPRESSORS

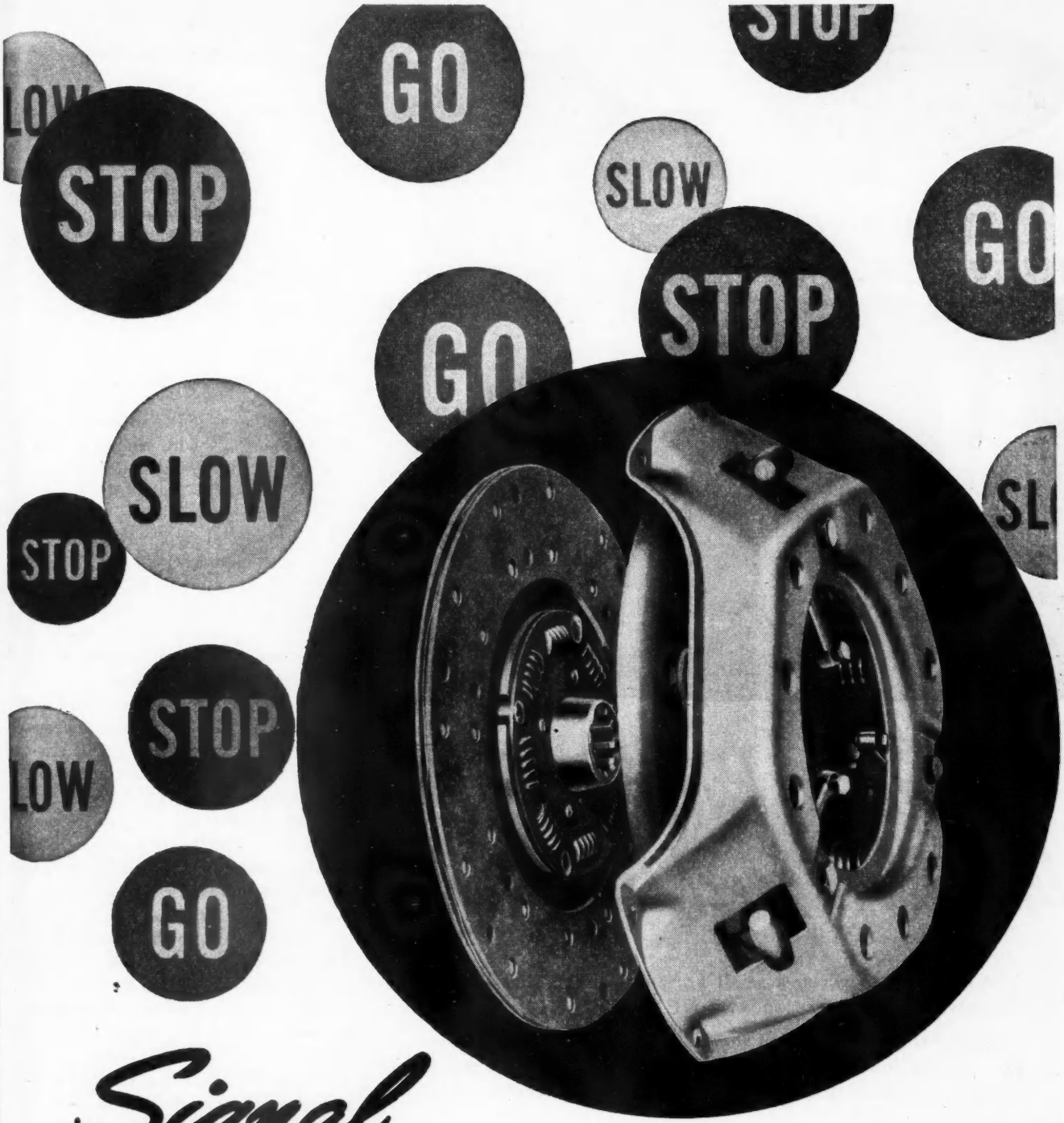
GASOLINE PUMPS • CAR WASHERS • AIR SCALES • REELS • LIFTS

● WHEN WAS IT?

ANSWER . . . (To Question on P. 130)

In 1932, at a meeting of the National Transportation Committee, this conclusion was reached —"One thing is certain. Automotive transportation is an advance in the march of progress. It is here to stay."

(Another Quiz Cartoon is on P. 138)



Signal Performance

Swiftly and constantly, traffic lights change. The driver must have instant, effortless, *sure* clutch operation.

Long clutches have easy, positive action and high torque capacity. Since 1922, they have been standard equipment on millions of cars, trucks, buses, and tractors.

LONG

CLUTCHES • RADIATORS • OIL COOLERS

LONG MANUFACTURING DIVISION
BORG-WARNER CORPORATION
Detroit 12, and Windsor

THE MASTER OF FLAME
ANSUL
REG. U.S. PAT. OFF.
FIRE EXTINGUISHING EQUIPMENT
duGas

DRY CHEMICAL
FIRE EXTINGUISHERS



New...

Faster Put-out by Inexperienced Operators

The difference between a small fire and a major disaster may be only a matter of seconds... WHEN THE FIRE STARTS.

An outstanding feature of the new Ansul-Dugas Extinguisher is its simple and quick operation. The new nozzle design makes expert extinguishing possible even by inexperienced persons.

HERE ARE OTHER IMPORTANT FEATURES

- 53% more Fire-Stopping Power.
- Highest Rating for SPEED and EFFECTIVENESS as determined by impartial authority.*
- Quicker, easier, on-the-spot recharge after use.
- Greater fire-fighting effectiveness pound for pound, dollar for dollar.
- Larger range stream and greater shielding of heat from operator.
- Increased fire-fighting capacity without increased weight.
- Engineered to resist corrosion.

STOP FIRE FASTER!

with Ansul-Dugas Dry Chemical Extinguisher

*Write for charts based on authoritative data of comparative ratings as determined by a national approval agency.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN

Protective Undercoaters

(CONTINUED FROM PAGE 132)

Special Uses

SO MUCH for the principal functions of the undercoater, which include sound deadening, rust prevention and abrasion protection. As mentioned at the outset and product has a number of other values.

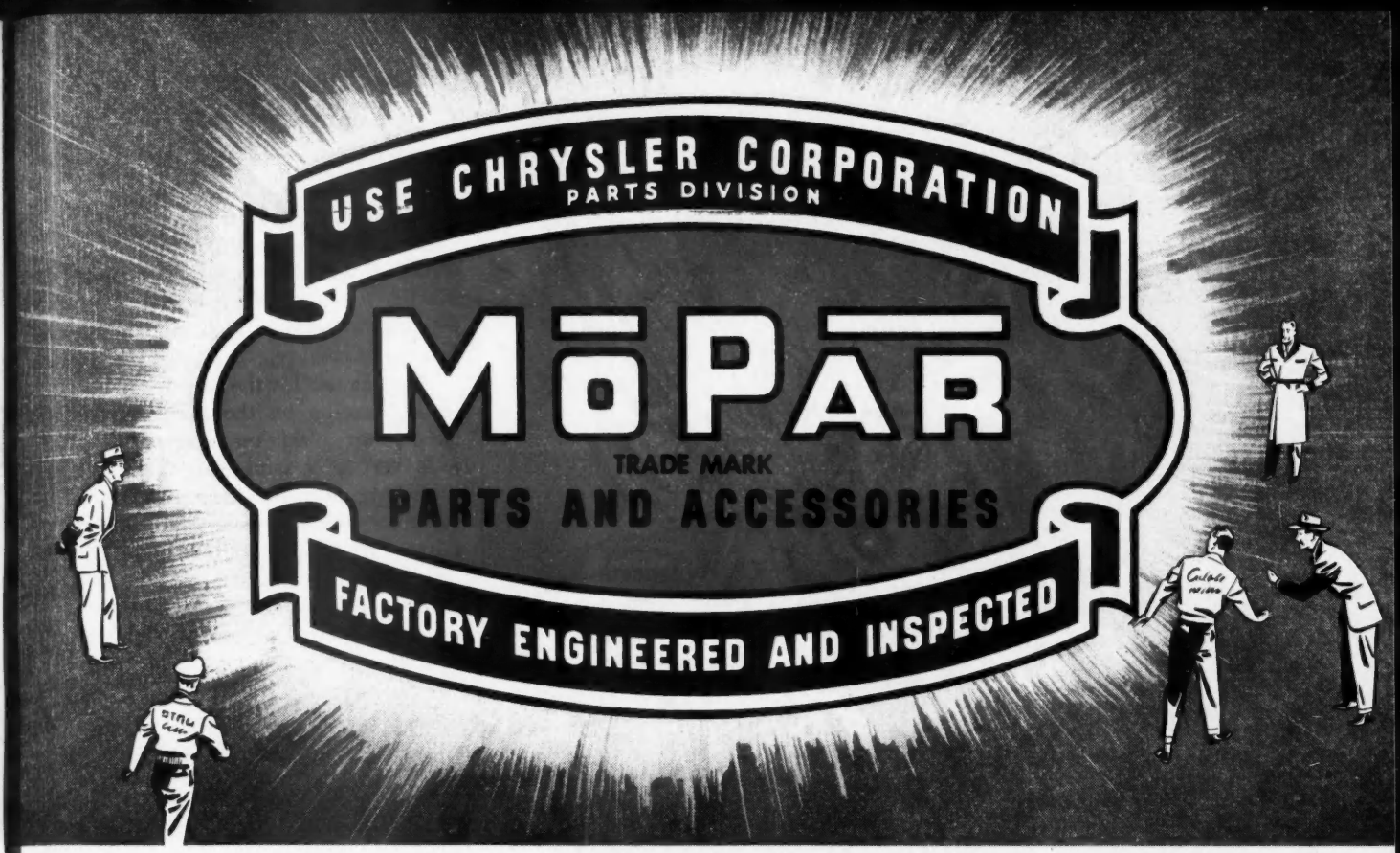
Possessing considerable insulating properties, it can be used to considerable advantage in keeping atmospheric cold and engine-made heat out of the cab. Used on cowl and cab flooring, it materially increases driver comfort and also, by sealing cracks, keeps out both unpleasant and dangerous fumes.

Its insulating properties also help out in a special application for the start-and-stop, door-to-door fleet operator whose sub-normal crankcase temperature has always been a major contributing factor in increasing sludge formation. Experience, backed by laboratory oil analysis tests, has shown that a layer of undercoating on the pan will increase crankcase temperature, although quantitative studies on this feature are not available at this writing. *Normally undercoating on the pan is not recommended* for exactly the converse reason. In normal service it is desired to keep the crankcase as cool as possible.

Also of benefit to the door-to-door fleet handling wet materials, such as ice and fresh milk is the fact that the undercoater is completely impervious to both moisture and acids. Used inside the body on floors and lower side walls, it forms an effective rust inhibitor. Three caution items should, however, be inserted here. First, be sure to mask any channels used for sliding racks, for nothing slides on the thick undercoater. Second, when floor strips are used they should be built up with thin overlays to increase their height over the surrounding floor level. Third, bodies so treated should be washed with water solutions only, as repeated applications of steam will break down the protective coating.

Many fleets also have found certain types of undercoaters very effective as a sound deadener on inside paneling. It is, however, extremely impor-

(TURN TO PAGE 136, PLEASE)



What's behind this emblem?

There's plenty behind it!

And if you're interested in the kind of parts that win customer satisfaction, it will pay you to take a look. Here's what you'll find:

TOP QUALITY—MoPar parts are manufactured to the same high quality required in cars and trucks built by Chrysler Corporation divisions.

FACTORY ENGINEERING—the ability to design for best performance—made possible by Chrysler Corporation's unexcelled engineering facilities.

FACTORY INSPECTION—full assurance that each MoPar product meets highest precision standards.

ACCURACY OF FIT—easier to install . . . made to the same close limits specified by the engineers who designed the vehicles.

A COMPLETE LINE—exactly the parts needed to service Plymouth, Dodge, De Soto and Chrysler cars, and Dodge "*Job-Rated*" Trucks.

CONVENIENT SERVICE PACKAGES—contain all the right parts necessary to perform a given repair job completely and correctly.

Yes . . . these are reasons why you can count on MoPar parts to win customer satisfaction . . . to assure more repeat business.

Where do you get these parts? Simply head for the famous MoPar emblem. You'll find it at the nearest dealer handling Plymouth, Dodge, De Soto or Chrysler cars, or Dodge "*Job-Rated*" Trucks.

MoPar PARTS

FOR

Plymouth

DODGE

DeSoto

CHRYSLER

DODGE *Job-Rated* TRUCKS

CHRYSLER CORPORATION, PARTS DIVISION
DETROIT 31, MICHIGAN



A Bob-Sledder Requires Special Equipment . . .

YOUR CARS AND TRUCKS NEED

PURITAN *Super 60* BRAKE FLUID

Maintenance costs on brake systems can be reduced by using Puritan Super 60 Hydraulic Brake Fluid—developed especially for heavy duty service. Here is a brake fluid compounded from organic materials to withstand the extreme conditions of commercial service, not to deteriorate even after long gruelling use—and to be kind to the other parts of the brake system. See how Puritan Super 60 has all the characteristics you need in a brake fluid for your fleets.

BOILING POINT 370°F: No danger of brake failure due to vaporization.

POUR POINT 60°F BELOW ZERO: Remains free flowing and mobile even in Arctic weather.

NON-GUMMING AND NON-OXIDIZING: Has a special base that does not gum or oxidize under any operating conditions.

MOISTURE ABSORPTION: Capable of absorbing all moisture of condensation—thus protecting wheel cylinders and metal parts against corrosion.

INERT TO RUBBER: Does not cause rubber cups to swell or deteriorate.

MISCIBLE: Mixes completely with all other brake fluids. Safe to add to any hydraulic brake system.

You can keep your cars and trucks producing longer, your brake systems dependably safe, and reduce your maintenance costs by switching to Puritan Super 60. You'll be money ahead to make a fresh start by cleaning out old, gummy brake fluid with Puritan Hydraulic Brake Flushing Fluid and refilling with Puritan Super 60 Brake Fluid. Get both from your NAPA jobber.



PURITAN COMPANY, INC.
ROCHESTER 6, NEW YORK
HYDRAULIC BRAKE FLUID AND FLUSHING FLUID • GASKA-SEAL NO. 1, 2 AND 3
SHOCK AND KNEE-ACTION OIL

NAPA
Assurance of Quality

Protective Undercoaters

(CONTINUED FROM PAGE 134)

tant that the product be absolutely dry before such inside paneling is installed. If not, solvents will be trapped making it hazardous to perform any welding operation which might later become necessary.

Another use for the undercoater is its application on the underside of hoods, particularly on passenger cars, as a very successful way of cutting down engine noise. Going one step further but in the same direction, it has been used successfully on either inside or outside surfaces of valve covers on over-head-valve engines. Stud and ventilation openings should be masked.

Finally there are a number of strategic uses for the undercoater which will suggest themselves to the individual operator. Some fleetmen, for instance, have had considerable trouble from rusted gasoline tanks, particularly on top. Hence the undercoater is applied to the tank before the body goes on. Still others, finding that the product is completely impervious to battery acids, apply it liberally to battery carriers and underhood areas near the battery when it is installed there.

Product Is Tough

SHOULD readers still be in doubt as to just how tough the product is, let them consider this case history of a railroad company operating high-speed streamlined passenger trains. Experience indicated that a baffle plate on the front end of each car had to be replaced after each 1500-mile run—so great was the abrasive effect of flying stones. After applying a well-known undercoater, it was discovered that nine trips, totalling 13,500 miles, could be made before replacement.

END

(Please resume your reading on P. 70)

APPRENTICE TRAINING

Despite the fact that government-assisted apprentice training programs have made relatively slow headway in the training of fleet mechanics, the plan is definitely a going concern. In all industries no less than 16,574 programs with 78,753 establishments cooperating were in existence at the close of 1946, according to Department of Labor figures.



IT'S FREE!

DON'T MISS



FOR

- **FLEET OWNERS**
- **PUBLIC CARRIERS**
- **EQUIPMENT MAKERS**
- **MERCHANTS**
- **MAINTENANCE MEN**
- **ADVERTISERS**

"ADS ON WHEELS" is jam-packed with a new kind of advertising "know-how." This full-color booklet shows how Meyercord Decals "cash-in" on free ad space... transform trucks into "mobile billboards."

Famous brand names, product reproductions and trademarks parade its colorful pages. It shows what OTHERS are now doing ... what YOU can do. It shows how to dominate American highways and streets with truck Decals! If you own or use trucks, as a business or part of your business, you will find "ADS ON WHEELS" the most complete guide to Decal truck sign advertising ever written.

Durable Meyercord Truck Decals can be made in any colors, size, designs! Overnight application on fleets of a dozen or thousand trucks slashes hand painting time and costs. Reserve your copy of "ADS ON WHEELS" now. It will be printed for limited distribution early this spring. Write today...on company letterheads, please. Address Dept 32-3.

Founder-Member Lithographic Technical Foundation

The MEYERCORD Co.

World's Largest Decal Manufacturer

5323-W. LAKE ST. - - - - - - - - - - - - - - CHICAGO 44, ILL.

ADVERTISE • IDENTIFY • DECORATE...WITH MEYERCORD DECALS

27 Factors Affect Tire Wear

(CONTINUED FROM PAGE 39)

flation; tread separation, deterioration of the rubber and fabric from oil and water, and damage from tire chains; and certain types of abnormal wear.

The results of the tire wear measurements conducted by the Iowa State Highway Commission to determine the relative resistance to wear of various makes of 100-level and 90-level tires and of synthetic rubber tire supplement the data obtained in this investigation, thus making it possible to present a summary of all of the major factors that contribute to tire wear and tire failures.

The term 100-level designates tires of the grade regularly used by car manufacturers as original equipment on new cars; the price of these tires is taken as a base (100 per cent = 100-level).

Summary and Conclusions

The significant data and conclusions of this investigation are as follows:

1. Variations in car speed caused greater differences in the rate of tire wear (loss of tread rubber) than did variations in braking and acceleration, type and conditions of road surface, tire inflation pressure, or any of the other factors investigated.

2. The rate of tire wear on concrete pavements at a nominal speed of 65 m.p.h. was four times that at a nominal speed of 25 m.p.h.

3. The greatest change in tire wear with change in speed was observed when operating on the most abrasive surfaces, for which wear rates at 65 m.p.h. were in some cases as much as four times those at 35 m.p.h.

4. The least variation of wear with speed was observed when operating on bituminous surfaces sealed with thin coatings of asphalt or covered with moderately soft limestone chips held in place by asphalt. The rate of wear on these surfaces at 65 m.p.h. was approximately double that at 35 m.p.h.

5. The higher rates of tire wear observed at the higher speeds were due to the greater amount of bouncing and slipping of the tires, the increased traction required at the rear wheels, and the increase in brake applications and braking time.

6. In stop-and-go tests, simulating city traffic conditions, the rate of wear was seven times that in normal driving on rural pavements at a speed of 25 m.p.h.

(TURN TO PAGE 142, PLEASE)

Tests Prove

ONLY WITH POWERENCH CAN YOU PROPERLY TIGHTEN WHEEL NUTS

• Torque tests on truck wheel nuts picked at random from operating vehicles reveal that wheel nuts tightened with ordinary wrenches average less than 200 foot pounds — about half the manufacturer's specifications.

This explains why so many nuts continue to loosen on the road, resulting in broken studs, egg-shaped holes, stripping, with attendant costly road delays and expensive servicing.

POWERENCH

Powerench—with its unique, patented, 3-to-1 geared power—provides the serviceman in the shop, or the truck driver on the road, all the power he needs to properly tighten nuts to specified 350 to 450 foot pound requirements.

And of course, *Powerench* is ideal for loosening tight nuts, and for removing nuts when stud is broken.



ONLY $29.25 to fleets, garages and service stations

B.K. Sweeney MANUFACTURING CO.
1601 23rd Street
Denver 17, Colorado

Powerench Div., Dept. C-3
B. K. SWEENEY Mfg. Co.
1601 23rd St., Denver, Colorado

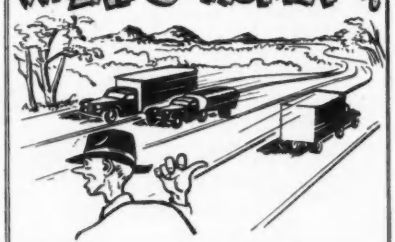
For a free demonstration of your Powerench, please advise name and address of your nearest distributor.

(Name) (Company)

(Type operation—No. trucks) (Street, Zone)

(City) (State)

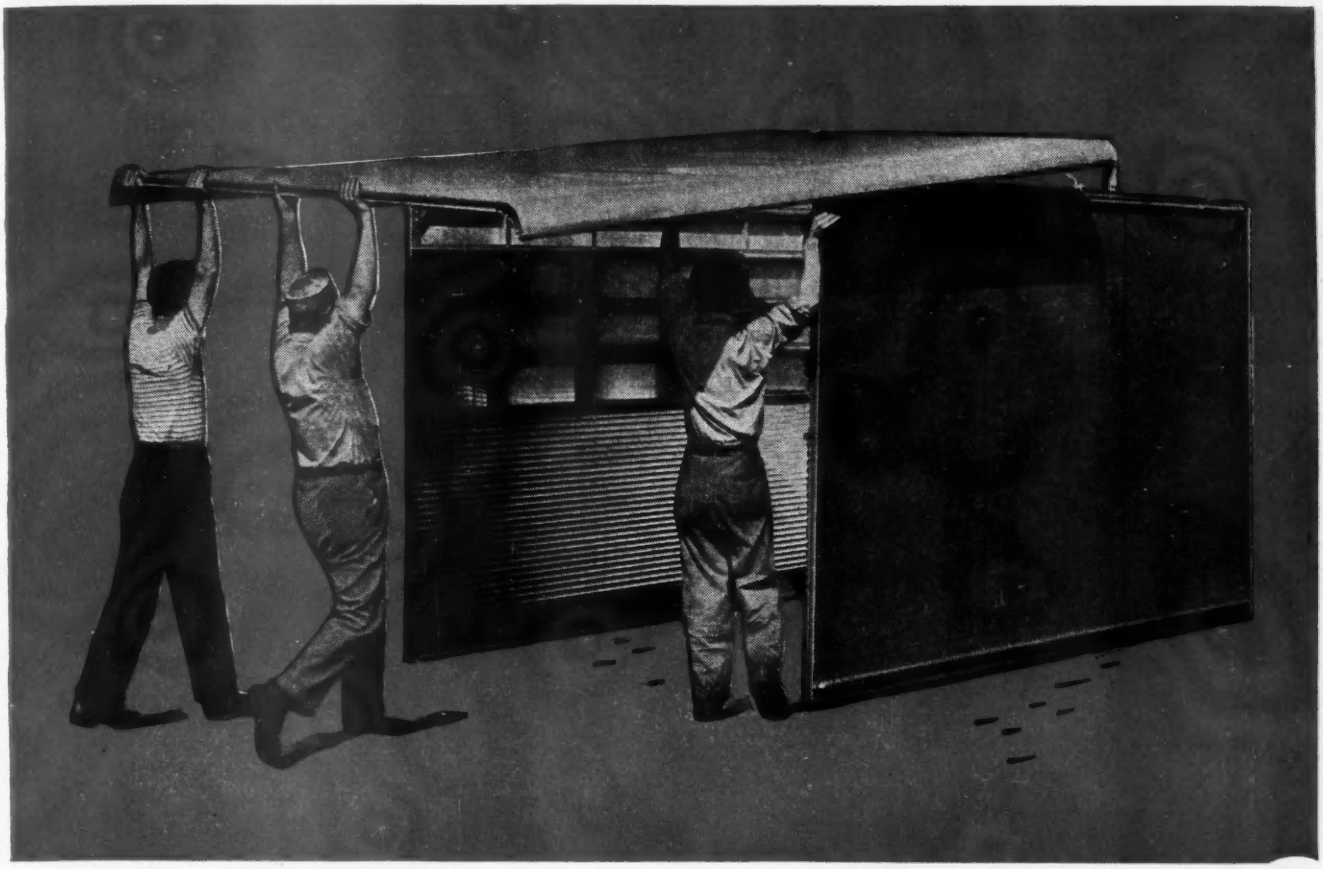
WHERE'S HOMER?



HOMER SAYS, "THIS STATE RANKS FIRST IN MULTIPLE-LANE HIGHWAYS." TELL US, WHERE IS HOMER?

☐ PENNSYLVANIA
☐ NEW YORK
☐ OHIO
☐ CALIFORNIA

Answer on P. 142



Standard parts shipped knocked down . . . assembled to your order within a few hours

REYNOLDS aluminum truck bodies ... *Custom-built* right near your plant

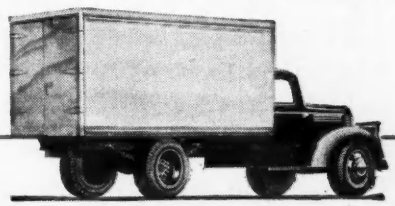
Multiple-assembly aluminum truck bodies—Reynolds-designed and Reynolds-engineered—are available today right in your own locality!

An experienced body fabricator has literally thousands of combinations of lengths . . . widths . . . doors . . . linings . . . insulations . . . Your truck or fleet is "tailor-made" to suit your needs.

And when it comes to repairs, a Reynolds body distributor has replacement parts available right on the spot. No long lay-ups . . . no costly delays.

New, war-developed Reynolds Aluminum alloys, only *one third the weight of steel,* yet with no loss of structural strength bring great weight savings . . . more payload . . . faster speed . . . less wear on tires. And aluminum's great corrosion-resistance cuts maintenance costs...requires no protective painting.

Reynolds is taking orders now for unlimited numbers of multiple-assembly truck bodies for early delivery. For the name of your nearest body distributor, write Reynolds Metals Co., Truck & Trailer Div.,1419-D Dixie Highway, Louisville 1, Ky.



REYNOLDS TRUCK BODY—straight side

Your choice of 3 body models, 3 widths, 2 heights, 7 lengths, 15 back-door combinations, 8 interior linings. All available in standard parts.

REYNOLDS METALS

REYNOLDS ALUMINUM TRUCK AND TRAILER BODIES

1721

WITH GENERALS IT'S ALWAYS MORE *Original* MILES · MORE *Recap* MILES



Ship by Truck!

Melvin TRUCKING CO.

TELEPHONES 6129 6130

SERVICE MEMBER

Melvin TRUCKING CO.

GENERAL OFFICE
1818 S. WASHINGTON ST., PEORIA 2, ILL.

ADDRESS REPLY TO

January 18, 1947

Mr F. A. Gray
Murphy-Clark
Peoria, Illinois

RE: Your General Tire Recapping Service

Dear Mr Gray:

In November, 1945 we sent four 10:00 x 20 tires to you for Kraft-Balanced Recapping as a test. We received such excellent service that we have standardized on your Kraft Recapping on our fleet of 110 trailers and 80 tractors.

We found that the Kraft-Balanced Recap is one of the most outstanding processes we have used. This system is making a definite cut in our tire costs per mile over preceding years.

Also we are completely in accord with your inspection and complete follow-up record which gave us first-hand information on our fleet.

In closing, we have appreciated your presenting this tire service to us.

Yours very truly,

MELVIN TRUCKING CO.

E L Garrison,
President

ELG:vis

THE Kraft System of Balanced Recapping provides a tread that gives *new tire performance and protection.* The scientific inspection of every Kraft process, under a factory control method that assures precision quality with every step, is the Kraft System's assurance of uniformly dependable, extra mileage recapping.

The General Truck Tire Extra Mileage Package is a complete engineered tire service. Your General Truck Tire Dealer is prepared to furnish expert analysis of your new tire needs every mile your truck operates. As an important step in this program he is equipped to give you long additional mileage through Kraft Balanced Recapping.

KRAFT SYSTEM *Balanced* RECAPPING

KRAFT SYSTEM RECAPPING HEADQUARTERS

Aberdeen, Washington, General Tire Service
Akron, Ohio, General Tire Service, Inc.
Alma, Mich., Giles Tire Service
Alpena, Michigan, Richards & Hodapp
Alton, Illinois, Alton Tire Sales Co.
Albuquerque, N. M., Albuquerque Tire Co.
Alliance, Ohio, M.W. Third General Tire Serv. Inc.
Anniston, Alabama, Lena Styles Tire Co.
Appleton, Wisconsin, Ray's Tire Co.
Artesia, N. M., Clyde Parrish Oil Co.
Ashland, Kentucky, Wurts Brothers
Atlanta, Georgia, General Tire Service Co.
Aurora, Ill., Aurora Tire Service, Inc.
Bakersfield, Calif., Goodwin General Tire Serv. Inc.
Baltimore, Maryland, O'Toole General Tire Co.
Batavia, New York, Harry E. Slocum, Inc.
Battle Creek, Michigan, Bill Wood's Auto Serv.
Bay City, Mich., Harold Alexander
Bellefontaine, Ohio, Logan Tire Co.
Benton Harbor, Michigan, Benson Tire Service
Binghamton, N.Y., Tom Lawler General Tires, Inc.
Birmingham, Ala., Drennen General Tire Co.
Bloomington, Ill., Thornton & Anderson
Boise, Idaho, Hardy Bros.
Boston, Mass., General Tire Co.
Bradford, Pa., Motor Inn Filling Station
Bridgeport, Conn., Bridgeport Gen. Tire Co.
Bronx, N. Y., Bronx General Tire
Brooklyn, N. Y., Kings County Gen. Tires, Inc.
Brookville, Pa., Auto Service Station
Bryan, Ohio, Mac's Tire Shop
Buffalo, N. Y., Parshall-Dowdall Gen. Tires
Burlington, N. C., The General Tire Supply
Burlington, Vt., Yandow Motor Co.
Butler, Pa., Ray Andre
Butte, Montana, Knievel Tire Service
Camden, N. J., Camden Storage Battery Co.
Canton, Ohio, Sampson General Tire Co.
Cedar Rapids, Iowa, Allen Motor Co.
Chambersburg, Pa., William R. Wilder
Charleston, W. Va., J. E. Ratliff, Inc.
Charlotte, N. C., Myers Tire Co.
Charlottesville, Va., Tire Recapping Corp.
Chattanooga, Tenn., Sidney Scott Tire Co.
Cheyenne, Wyo., Chief Oil Corp.
Chicago, Illinois, Dunne General Tire Co.
Chico, Calif., Jones Auto Service
Chillicothe, Ohio, Art Howson's Tire Service
Cincinnati, Ohio, Sohngen & Bischoff
Clarksburg, W. Va., Shell Super Service
Cleveland, Ohio, Shea General Tire Co.
Colorado Springs, Colo., Dostal-Howard Tire Co.
Columbia, S. C., Columbia Tire Service, Inc.
Columbia, Tenn., Russell & Bartlett
Columbus, Ohio, General Tire Sales
Corpus Christi, Texas, Dickenson Gen. Tire Service
Cortland, N. Y., Tallmadge Tire Service
Covington, Va., County Motors
Crawfordsville, Ind., Dice Tire Service
Dallas, Texas, Daltex Company, Inc.
Danielson, Conn., Danielson Oil Co., Inc.
Danville, Illinois, George B. Satterwhite Co.
Davenport, Iowa, Callen Tire Sales
Dayton, Ohio, Knapp General Tire Service, Inc.
Deadwood, S. D., Eddie's Tire & Glass
Decatur, Alabama, Ryan Tire Service
Denver, Colo., Joe Kavanaugh, Inc.
Des Moines, Iowa, Iles-McKinney & Wolf
Detroit, Mich., General Tire Service
Dover, N. J., Schwalb Tire Co.
Dunkirk, N. Y., Bridge General Tire
Elizabeth, N. J., Abbott-Wright Tire & Treading
Elizabeth City, N. C., City Vulcanizing Co. Inc.
Elkins, W. Va., General Tire & Battery Co.
Elmira, N. Y., McKinnon General Tire Co.
El Paso, Texas, J. R. Turner
Elyria, Ohio, George Hermann
Erie, Pa., Chaffee Tire Co.
Eureka, Calif., James S. Cloney
Evansville, Ind., Van Winkle Tire Sales
Fargo, N. D., Haggart's Service, Inc.
Flint, Michigan, Flint General Tire Co.
Fond du Lac, Wisconsin, Hayward Tire Co.
Fort Dodge, Iowa, Tire Recappers Co.
Ft. Lauderdale, Fla., Bill Acenbrack Co.
Fort Wayne, Ind., Sagstetter General Tire Co.
Ft. Worth, Texas, General Tire Service
Fremont, Nebr., Nebraska Industries (Standard Parts Co.)
Fremont, Ohio, Hamilton Tire & Battery
Fresno, Calif., LeMoss-Smith Tire Co.
Gainesville, Fla., University Chevrolet Co., Inc.
Galveston, Texas, Adolphus Tire Co.
Gettysburg, Pa., Reel Tire Co.
Goldsboro, N. C., Prince Tire Co.
Grand Rapids, Michigan, Bill Elder
Green Bay, Wisc., Green Bay Tire Service
Greensboro, N. C., H. Roger Jones, Inc.
Greensburg, Pa., A. L. McClintock
Greenville, S. C., Hunter Service Station
Greenwood, Miss., Short Tire & Oil Co.
Hamilton, Ohio, Marsh-Schneider Tire Co.
Harlan, Ky., Harlan Retreading Co.
Hartford, Conn., The Auto Tire Co., Inc.
Harrisburg, Pa., V. D. Leisure Co.
Harrisonburg, Va., Glen Shomo
Hattiesburg, Miss., Hattiesburg Service Station
Hayward, Calif., General Tire Sales & Service
Hickory, N. C., Hickory Tire & Battery Co.
High Point, N. C., Greene Tire Co.
Holland, Mich., Bill's Tire Shop
Hornell, N. Y., Hornell General Tire Service
Houston, Texas, General Tire Sales Co.
Huntsville, Ala., Huntsville Tire Co.
Hutchinson, Kans., Glenn Sheets Gen. Tire & Batry.
Indianapolis, Ind., General Tire Co.
Inglewood, Calif., Inglewood Tire Service
Jackson, Mich., General Tire & Treading, Inc.
Jackson, Miss., Gear Tire & Service, Inc.
Jacksonville, Fla., Pruitt Tire Co., Ltd.
Jamestown, N. Y., Emblem Oil Co.
Jersey City, N. J., McGuinness General Tire
Johnstown, Pa., The Del Boring Tire Service
Kalamazoo, Mich., Otto Kihm Tire Co.
Kalispell, Montana, Kalispell Tire Service
Kansas City, Mo., McDowell Tire Co.
Kingsport, Tenn., Young's Tire Service
Klamath Falls, Ore., Monarch Tire Service
Knoxville, Tenn., General Tire Sales Co.
Latrobe, Pa., James J. Di Primio
Lansing, Mich., Roberts Tire Sales, Inc.
Lawrence, Mass., Albert E. Schlott
Lawrenceville, Va., Brunswick Rubber Co.
Lebanon, Tenn., McDowell Tire Co.
Lewiston, Idaho, General Tire & Retreading Co.
Lexington, Ky., Lexington Gen. Tire Co.
Liberty, Ky., Liberty Tire & Recap Co.
Lima, Ohio, W. A. Pflaum
Lodi, Calif., Holz Tire & Recap Service
Long Beach, Calif., Richardson Tire Co.
Long Island City, N. Y., Astoria Tire Co.
Longview, Texas, McCann Tire Service
Los Angeles, Calif., Aves Tire Service
Los Angeles, Calif., Fuller General Tire Service
Louisville, Ky., Hurry-Up Broadway
Lynchburg, Va., The Lynchburg Garage
Macon, Ga., Gordon Bush Tire Co.
Madison, Wisc., Monona Tire Company, Inc.
Malvern, Ark., Malvern Tire Co.
Marietta, Ohio, The Tire Shop
Massillon, Ohio, Sampson's General Tire
McAllen, Texas, Carey General Tire Sales Co. Inc.
McKinney, Texas, Tunnell Tire Co.
Meadville, Pa., Warren C. Smith Motors
Memphis, Tenn., Steepleton General Tire Co.
Miami, Fla., General Tire Co. of Miami
Middletown, Ohio, Russ Dempster Gen. Tire Sales
Milwaukee, Wisc., General Tires Inc.
Minneapolis, Minn., The General Tire Co.
Mobile, Ala., Delaney Specialty Co.
Montevideo, Minn., Anderson's Super Service
Montgomery, Ala., Moody Tire Service, Inc.
Montpelier, Vt., J. Leo Johnson Corp.
Mt. Pleasant, Mich., "Bill" Murray's Tire Service
Muncie, Ind., Clark's Service Co., Inc.
Murfreesboro, Tenn., McDowell Tire Co.
Nacogdoches, Texas, Nacogdoches Tire Co.
Napoleon, Ohio, E. V. Austermiller
Nashville, Tenn., General Tire Co.
Newark, N. J., The General Tire Co.
Newark, N. Y., McDougall's Service Garage
Newburgh, N. Y., Harvey Brothers
Newcastle, Ind., Henry County Tire Store
New London, Conn., Tire Service Co.
New Orleans, Jimmie Hanemann Tire Service
New York City, New York General Tire Co.
Niagara Falls, N.Y., Kelly-Horak Gen. Tire Co., Inc.
Norfolk, Va., Joynes Tire Co.
Norristown, Pa., Reiff & Stephens
Norwich, Conn., A. J. Senft & Son
Ocala, Fla., Jack Tucker's Service
Oil City, Pa., Hemlock Oil Co.
Oklahoma City, Eckhard Morse General Tires
Olean, N. Y., W. L. Sullivan & Co.
Omaha, Nebr., Miller-Knuth Chevrolet Co.
Orange, N. J., Lackawanna General Tire Co.
Orlando, Fla., King's General Tire Service
Paducah, Ky., Potter Tire & Battery Co.
Painesville, Ohio, Hach's Auto Service
Panama City, Fla., Central Tire Service
Paris, Illinois, Paris General Tire Co.
Parkersburg, W. Va., Mahone Tire Service
Paterson, N. J., Brustlin Bros.
Peoria, Ill., Murphy-Clark
Philadelphia, Pa., Carnell & Bradburn
Piqua, Ohio, McShane Tire Sales
Pittsburgh, Pa., Campbell General Tire Co.
Pittsfield, Mass., Pittsfield Retread & Tire Co.
Pontiac, Illinois, Potters Tire Hospital
Pontiac, Michigan, Pontiac General Tire Co.
Portland, Oregon, Commercial Tire Co., Inc.
Portsmouth, Va., Royal Garage
Pottsville, Pa., Leisure-Black
Poughkeepsie, N. Y., Gauthier General Tire
Provo, Utah, Morain General Tire Service
Providence, R. I., General Tire Service, Inc.
Pueblo, Colo., E. E. Chrisman
Queens Village, N. Y., Breitfeller Sales, Inc.
Rapid City, S. D., Eddie's Tire & Glass
Reading, Pa., General Tire Co. of Reading
Reidsville, N. C., Reidsville Tire Co
Richmond, Va., Marlowe Tire Co.
Rio Vista, Calif., Holz Tire & Recap Service
Riverside, Calif., Rome's Tire & Auto Supply
Rochester, N. Y., Scanlon-Lewis Gen. Tires, Inc.
Rochester, Pa., Beco Sales & Service
Rupert, W. Va., Johnson Bros.
Sacramento, Calif., Earl C. Reed
Saginaw, Michigan, Valley Tire & Repair Co.
Salem, Oregon, State Tire Co.
Salinas, Calif., Don Hultz
Salt Lake City, Utah, Wheeler Gen. Tire Co.
San Angelo, Texas, Red Covington Tire Service
San Bernardino, Calif., General Tire Service Co.
Sandusky, Ohio, Brinker's Service
Santa Monica, Calif., Link Anderson, Inc.
Saranac Lake, N. Y., Adirondack Tire Service
Scranton, Pa., A. H. Steppacher
Seattle, Wash., General Tire Co.
Sharon, Pa., John B. Lewis
Sheboygan, Wisconsin, Grasse Bros. Oil Co.
Sioux City, Iowa, O'Keefe General Tire Co.
Somerset, Pa., North Side Motors
Sonora, Calif., J. S. West & Co.
South Bend, Ind., The Singer General Tire Co.
South Pottstown, Pa., Yahner's General Tire Co.
Spartanburg, S. C., Whitlock Tire Service
Spokane, Wash., Tire Service Co.
Steubenville, Ohio, Shaffer's General Tires, Inc.
St. Louis, Mo., General Tire Co. of St. Louis
St. Paul, Minn., General Tire Co. of St. Paul
Syracuse, N. Y., Syracuse General Tire Corp.
Tacoma, Wash., Alger Tire Co.
Tampa, Fla., The Pioneer Tire Company, Inc.
Toledo, Ohio, Richard General Tire Co.
Traverse City, Mich., Doug. Linder Tire Co.
Troy, N. Y., Williams Tire & Rubber Co., Inc.
Tulsa, Okla., Murphy Tire Co., Inc.
Uniontown, Pa., Steiner Service Co.
Utica, N. Y., Geo. L. Aitken, Inc.
Vancouver, Wash., McNab's Service
Ventura, Calif., Warren General Tire Co.
Victoria, Texas, Allen Tire Recapping Service
Waltham, Mass., Roy Johnston's Tire Shop
Warren, Ohio, Varley's Warren General Tires
Washington, D. C., Croker General Tire Co.
Watertown, N. Y., Holton & Teghtmeyer, Inc.
Watertown, S. D., General Tire Service
Watsonville, Calif., Carroll's Truck Stop
Wichita, Kans., Boone-Scotty Gen. Tires, Inc.
Wilkes-Barre, Pa., McCarthy Tire Service
Wilmington, Del., C. W. Hazel
Winona, Minn., Kalmes Tire Service
Winston Salem, N. C., Parrish Tire Co.
Worcester, Mass., Bowker-Hamblin-Malmquist, Inc.
Yonkers, N. Y., Yonkers General Tire
York, Pa., Huber Tire Co.
Youngstown, Ohio, Safety Tire Co.



The GENERAL
TRUCK TIRE

THE GENERAL TIRE & RUBBER COMPANY
AKRON, OHIO

27 Factors Affect Tire Wear

(CONTINUED FROM PAGE 138)

7. The average rate of wear of tires used regularly on city streets at the customary speeds was two to three times that of tires used on rural pavements at 45 m.p.h.

8. The rate of tire wear on dry pavements was approximately double that on the same pavements when wet.

9. When wheels are out of alinement, forward motion of the car produces a continuous braking effect which, in extreme cases, may result in tire wear at 10 times the normal rate.

10. Rate of tire wear during the first 500 miles of use was three times the rate after tires had been driven 3000 to 6000 miles.

11. Rate of tire wear was affected only slightly by variations in atmospheric temperature. On gravel surfaces the rate of wear was greatest in the summer months, but on dry concrete pavements and bituminous surfaces the rates of wear were greatest during the winter.

12. The rate of wear for the tires on rear wheels was from 130 to 200 per cent of the rate on front wheels. As a general average, the tires on the right wheels wore 10 per cent faster than those on the left wheels.

13. Switching or "rotating" all tires, including that on the spare wheel, from one wheel position to the next around the car every 2000 miles is recommended as a means of equalizing tire wear.

14. Tire wear on curves at speeds that caused tires to "scream" was more than 10 times the wear at speeds that did not result in sidewise skidding.

15. The rates of wear of tires of the 100-level grade made by various manufacturers, and normally supplied on new cars in prewar days, did not vary from the average by more than 10 per cent.

16. The rate of wear of two synthetic rubber tires, on one car, exceeded the rate for the two regular 100-level tires by approximately 30 per cent.

17. Increase in the rate of wear of tires, because of age, was less than 25 per cent for ages up to 3 years. Effect of age on wear was twice as great for rear tires as for front tires.

18. The average life of 10 tires operated on concrete pavements was 36,651 miles. On gravel surfaces the average life for 20 tires was 23,160 miles. All of the test tires were used more miles per year than are those on the average passenger car and, therefore, under more favorable conditions as to age.

19. Records of car owners and of tire manufacturers indicate that in 1940 the average life of tires in the United States was approximately 22,000 miles.

(TURN TO PAGE 144, PLEASE)

OUT OUR WAY



Another Name for Safety is "SOL-SPEEDI-DRI"

Keep floors clean and safe with SOL-SPEEDI-DRI, the granular absorbent that soaks up oil and greases, water and oil combinations, gasoline, and solvents as a blotter soaks up ink. No extra help — no expensive machinery — is required for its use. SOL-SPEEDI-DRI reduces the danger of fire, for SOL-SPEEDI-DRI will not burn.

Suppliers:—

East:

Safety and Maintenance Co., Inc., No. 1 Wall Street, New York 5, N. Y.

South, Midwest, West:

Waverly Petroleum Products Co., Drexel Building, Philadelphia 6, Pa.



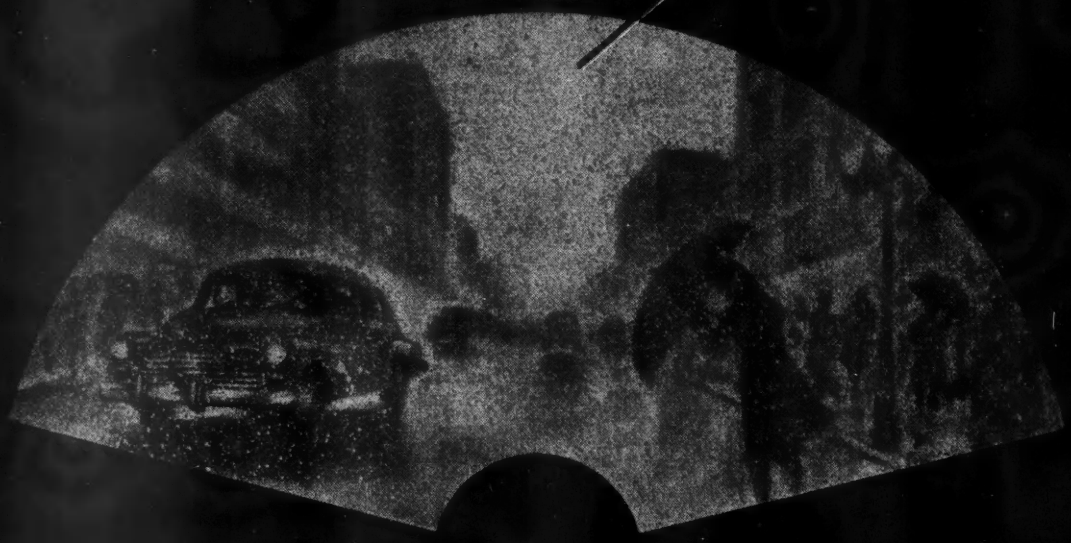
● WHERE'S HOMER?

ANSWER . . . (To Question on P. 138)

Ohio leads in multiple-lane highways—roads wide enough for three or more lanes of traffic—with 1913 miles. Pennsylvania is second with 1483 miles and California third with 1393 miles.

(Another Cartoon Quiz is on P. 144)

When your windshield looks like this...



...just touch the button and Trico's Two Little

Squirts

will wash it while you drive

plus nominal installation



• The Trico Automatic Windshield Washer squirts two jets of water on your windshield... your wiper blades swing... and off goes blinding road splash, muddy mist, dirt and grime. Easily and quickly installed on any car or truck, new or old.

TRICO

Automatic Windshield Washers

Trico Products Corporation, Buffalo 3, New York

27 Factors Affect Tire Wear

(CONTINUED FROM PAGE 142)

20. The longest life of a 100-level tire in the wear tests made by the Iowa State Highway Commission was 70,000 miles, and the shortest life 20,000 miles. One of the synthetic rubber tires had a life of 36,000 miles.

21. Operation of a vehicle equipped with a set of tires with recapped treads made of 95 per cent reclaimed rubber, indicated a life after recapping of 14,000 miles if speed were restricted to 35 m.p.h.

22. A life of 60,000 miles is a reasonably expectancy for 100-level tires with one recapping of reclaimed rubber, and restriction of speed to 35 m.p.h.

23. Many thousands of tire-miles are lost when tires become unserviceable because of avoidable carcass failures long before the treads are worn smooth. Among avoidable damages are abnormal tread wear; carcass weakness resulting from neglected cuts and punctures, stone bruises and fabric breaks, and loosening of inside cords by running on soft or flat tires; overload, incorrect inflation, and rim bruises; and tread separation, deterioration from oil, and long exposure to sunlight or heat.

24. In 132,000 miles of driving on gravel surfaces, there were 98 punctures as compared with a single puncture in the same distance on concrete pavements and one puncture in 72,000 miles on bituminous surfaces.

25. The heat, impact, and fatigue effects of operation on rough, loose, corrugated gravel surfaces resulted in tread cracking and blowouts. Approximately 30 per cent of the original (new-to-smooth) tread-groove depth was still remaining when these tires became unserviceable because of carcass failures.

26. Continuous operation at 65 m.p.h. on concrete pavements, with no change in atmospheric temperature, caused the pressure in 6.00-16 passenger car tires to increase 4.6 p. s. i. (pounds per square inch) in the rear tires and 3.5 p. s. i. in the front tires. For continuous operation under similar conditions the tire pressure was 1.5 p. s. i. higher at 65 m.p.h. than at 35 m.p.h. for both the front and rear tires.

27. The tire pressure rise when driving on gravel surfaces was 0.25 p. s. i. lower than that on concrete pavements for corresponding speeds and atmospheric temperatures.

(TURN TO PAGE 146, PLEASE)



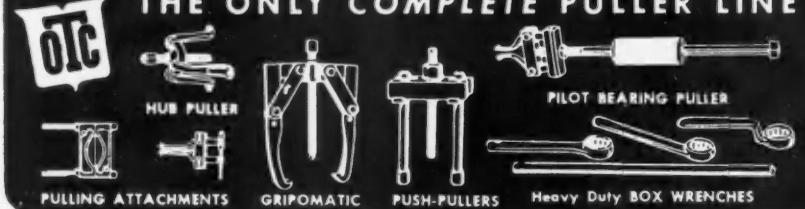
ONE MAN does it! As shown above, the short bar is used as a stop against the ground, thus holding the inner wrench and inner cap nut in place while the outer cap nut is removed. The outboard support jack is quickly adjusted for height with a novel self-locking device. It permits exerting sufficient leverage to break loose the cap nuts or to tighten them properly. ***No. 1201 Complete Set***—outer socket, inner socket, 28" bar, outboard jack support, 1¾" box wrench, 36" handle.

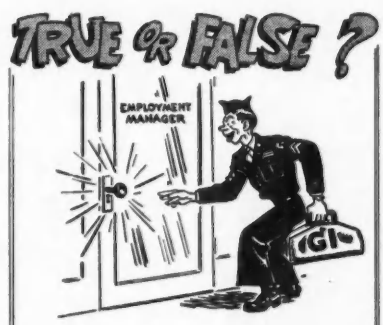
ASK YOUR JOBBER for complete OTC Catalog. It's a helpful manual on pulling operations.



OWATONNA TOOL CO.
335 CEDAR STREET, OWATONNA, MINN.

OTC THE ONLY *COMPLETE* PULLER LINE





THE AUTOMOBILE INDUSTRY HAS EMPLOYED A HIGHER PERCENTAGE OF EX-SERVICEMEN THAN ANY OTHER MANUFACTURING INDUSTRY.

☐ TRUE ☐ FALSE

Answer on P. 148

There's an EASY way



Right — Model 3GB
Rapid Reverse Winch

Gar Wood truck mounted Cranes with capacity from 3000 pounds to 10 tons are Full Powered and have varying boom lengths with 180° swing. Cranes are complete with all drive and mounting parts.

WHEN it comes to tough pulls and heavy lifts, the easy way is spelled G-A-R W-O-O-D. And whether you're doing direct pulls in the field, or heavy lifts on a construction job, it's the quickest, safest, most economical way, too.

For every Gar Wood Crane or Winch . . . and there's one built for *your* particular kind of rugged duty . . . is designed, engineered, and built to do the job with *maximum efficiency, greatest safety,* and *lowest upkeep.* That's why they make the toughest jobs *easy.* Finish jobs *faster.*

In use everywhere, they *must* be good. For your next job, specify Gar Wood.

GAR WOOD
GW
TRADE MARK
INDUSTRIES
DETROIT 11, MICHIGAN

GAR WOOD INDUSTRIES, INC.

WINCH AND CRANE DIVISION • WAYNE, MICH. • ALSO BUILDERS OF HOISTS AND BODIES • ROAD MACHINERY
TANKS • DITCHERS AND SHOVELS • HEATING UNITS • BOATS • GENERAL OFFICES: WAYNE, MICHIGAN

27 Factors Affect Tire Wear

(CONTINUED FROM PAGE 144)

28. An increase of 1.0 p. s. i. in tire pressure was observed for each 20 deg. F. rise in atmospheric temperature.

29. A normal loss in tire pressure of 1 to 2 p. s. i. per week was observed during the winter, and of 2 to 4 p. s. i. during the summer.

30. An inflation pressure of 30 to 32 p. s. i. "cold" is recommended to obtain the greatest service from 6.00-16 tires.

31. The practice of decreasing the inflation pressure by letting air out of tires in hot weather is not recommended, unless pressures are checked and adjusted carefully and frequently.

32. The temperatures in the treads of 6.00-16 tires in continuous operation at 25 m.p.h. on dry concrete pavements, averaged 35 deg. F. higher than the atmospheric temperatures in summer and 55 deg. F. higher in winter. When operating under similar conditions at 65 m.p.h. the tread temperatures averaged 75 deg. F. higher than the atmospheric temperature in summer and 95 deg. F. higher in winter.

33. Tread temperatures averaged about 40 deg. F. lower on wet surfaces than on the same surfaces in the dry condition.

34. By making suitable allowance (an increase of 3 to 5 per cent) for the changes in tire volume due to changes in tire pressure, the tire pressures for various tire-air temperatures can be computed by applying the laws relating to pressure and temperature of gases.

35. The costs for 6.00-16 tires and tubes operated on concrete pavements in Iowa and Kansas averaged 0.18 cent per car-mile; for bituminous surfaces in Kansas the average cost was 0.19 cent per car-mile; and for gravel surfaces in Iowa it was 0.37 cent per car-mile. The average speeds to which these costs apply were 42½, 43, and 37 m.p.h., respectively.

36. In 1910 the average life of tires was less than 3000 miles and the average cost of a tire and tube was about $45. Thus, the average cost for tires and tubes in 1910 was about 6 cents per car-mile, or 33 times the average cost of the tires and tubes used on concrete pavements in this study.

37. The tire costs in the stop-and-go driving on concrete pavements averaged 0.61 cent per car-mile, or more than three times the corresponding cost for average cross-country driving.

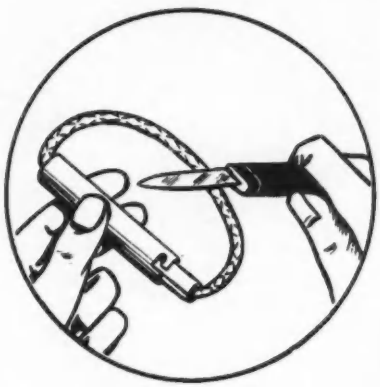
38. Highway engineers can aid in tire conservation by minimizing the abrasiveness, within the limits of safety, when repairing or resurfacing roadways. Roads and streets should be kept in good repair, free from pieces of metal and glass that can puncture tires. Holes with sharp edges, which cause cuts and bruises that may result in blowouts, should be repaired promptly.

39. Measures recommended to car owners are: Start and stop slowly, reduce speed on sharp curves and steep hills, check tire inflation each week, and keep loads within the rated capacity of the tires.

END

(Please resume your reading on P. 40)

FREE!



SIGNAL-STAT
Ready Wired Fuse-in-Line Receptacles with Fuses

Just cut the wire and splice into any electrical line on your vehicle . . . fuse safety in a jiffy! Better, safer, cleaner than a fuse block. No hole drilling, no soldering.

FREE SAMPLE . . . Mail the coupon below—no obligation.



Patented

Other SIGNAL-STAT Products

Directional Signal Lamps with the famous SIGNAL-STAT Burn-out Proof Signal Switch. Lamps and switches available in complete sets or as replacement units.

SIGNAL-STAT PRODUCTS ARE SOLD THRU JOBBERS

COUPON FOR FREE FUSE-IN-LINE RECEPTACLE WITH FUSE

Please send me your free sample of the SIGNAL-STAT Fuse-in-Line Receptacle with Fuse.

NAME _____

BUSINESS NAME _____

STREET _____

CITY _____ STATE _____

SIGNAL-STAT CORPORATION
1430 HERKIMER STREET, BROOKLYN 33, NEW YORK

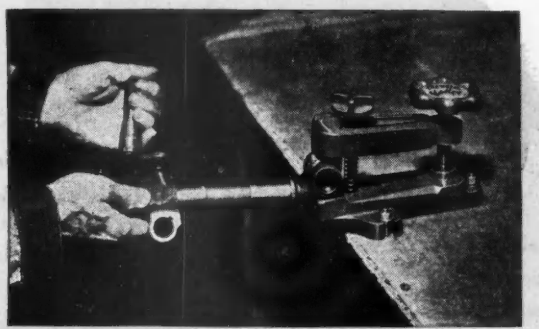
No slip...No scuff...No distortion

with the NEW

Velvet Grip VISE



The Velvet Grip Vise Makes a Tough Job Easy—fitting a king bolt and spindle without slipping or marring of parts.





Fitting a Pin and Piston—the fast, safe way. One adjustment for the first pin takes care of all the rest.

TO PROTECT FINE FINISH AND HIGH ACCURACY of Engine and Chassis Parts during fitting operations, Thompson Products introduces the Velvet Grip Vise.

Piston pins, king bolts and similar parts, cylindrical or tapered, hollow or solid, are gripped gently but firmly by the Velvet Grip Vise without scratching or distorting the finest parts.

FAST, EASY TO USE, THIS NEW VISE SPEEDS UP SHOP WORK.

The wing nut adjusts quickly. Once set, no further adjustment is needed for parts the same size. Patented spring action opens and closes the jaws automatically to receive new work.

Ask your Thompson Jobber to show you the easy, quick, *safe* operation of the Velvet Grip Vise.

Thompson Products

Cleveland • Detroit • Los Angeles • St. Catharines, Canada

IHC Point System

(CONTINUED FROM PAGE 63)

which assign specific values to varying conditions in these five categories:

1. *Type of terrain.* It is obvious that a truck in heavy off-highway service is subjected to higher twisting and shock than the same truck operating exclusively on the highway. If the highway is unusually rough, the vehicle gets more shock than if normal operation is over smooth roads.

2. *Road speeds.* Stresses increase in proportion to the square of the speed, hence are highly related to the expected travel rate.

3. *Method of loading.* Trucks loaded by power shovels are subject to severe shocks, whereas trucks loaded by hand sustain little or no shock.

4. *Nature of load.* Some operations, such as the dump truck again, carries a full load from point of origin to point of destination. Others such as department store delivery may expect a steadily diminishing load. This factor is important as it affects the frequency of maximum stresses.

5. *Amount of gear shifting.* Trucks in mountainous operations or under severe stop and start routes may expect considerably greater shock to the drive line than over-the-road vehicles on level terrain.

With these variables in mind, International Harvester has set up point values shown below, Table I, page 63.

For any given operation each of the five categories are considered, the proper point values assigned and totaled. The total is then applied to the following classification table and any allowable increase in g.v.w. is added to the contemplated pay load:

1. Type of Terrain	
Off-road	5
Fair roads	3
Good roads	1
2. Road Speeds	
Over 50 m.p.h.	3
40 to 50 m.p.h.	2
25 to 40 m.p.h.	1
Under 25 m.p.h.	0
3. Method of Loading	
Severe	5
Moderate	2
Normal	0
4. Nature of Load	
Static	2
Slowly diminishing	0
Quickly diminishing	0
5. Gear Shifting	
Extreme	3
Moderate	2
Normal	0

Coal Truck Example

LET us see how this would work out in an actual example. We will assume that a fleetman is considering a given truck model with a normal g.v.w. rating of 16,500 lb. It is to be used for coal delivery within an average size city where speeds are usually 25 m.p.h.; loading is by conveyor or hopper and the load will be carried from the coal yard direct to the customer.

(TURN TO PAGE 152, PLEASE)

Your BEST BATTERY CHARGER...
KEEPS BATTERIES IN TOP-FLIGHT CONDITION



MARQUETTE
Hi-Rate 180

Marquette Hi-Rate 30 Second Test gives you speed where you need it most . . . Speed in Testing and Speed in Charging. Shows *Exact* Battery Condition and *Exact* Charging Time. The accurate 30 Second Hi-Rate Test is so quick, you can make thorough battery test during short servicing stops . . . and keep batteries in top-flight condition *before* trucks have trouble.

"Just set it and forget it," the Automatic Time Switch shuts off charger. High Rate Discharge rejuvenates sulphated batteries. Individual Cell Check identifies defective cells. New type sensitive Circuit Breaker provides complete protection for both battery and charger. Copper Oxide Rectifier assures long, dependable service. 100 ampere capacity even at low line voltages.

Sold Exclusively thru the Nation's Leading Distributors

MARQUETTE
Automotive
EQUIPMENT
BATTERY CHARGERS
A.C. ARC WELDERS · ELECTRODES
GAS WELDING And CUTTING EQUIPMENT
ACETYLENE GENERATORS · ACCESSORIES

MARQUETTE MFG. CO. INC.
MINNEAPOLIS 14, MINN.

● TRUE OR FALSE?

ANSWER . . . (To Question on P. 144)

True. According to the Bureau of Labor Statistics, 27 out of every 100 employes in the automobile industry are veterans of World War II.

HERE'S A PACKAGE OF

FULL POWER

for WORN MOTORS





Satisfy your customers with a Full Power motor reconditioning. When that worn motor comes in your shop, play safe and tell the car owner "You better get a Moog Full Power job".

You know the Moog X-Plus Piston Ring set-up with the famous X-Plus Steel Oil Ring is the safest bet to bring back *Full Power!*

Next time, ask your jobber for Moog X-Plus Piston Rings and prevent costly comebacks! Write us for the Full Power Story.

MOOG PISTON RING COMPANY

Division: MOOG INDUSTRIES, INC., ST. LOUIS 14, MO.

MOOG X-PLUS FULL POWER PISTON RINGS
MOOG COIL ACTION FRONT END PARTS
MOOG ELECTRICALLY HEAT TREATED SPRINGS

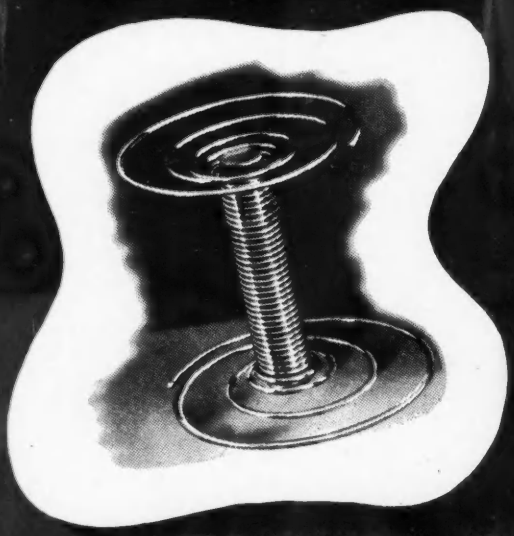
COPYRIGHT 1947 MOOG INDUSTRIES, INC.



IN THE COOLING SYSTEM FOR MONTHS BUT

Clear as Crystal!

YOUR ENGINE RUNS COOLER BECAUSE MODEL ATI BUTLER DE-SCALERS KEEP ENGINE METAL AS CLEAN AS THE WATER . . . 100% RUST-FREE, SCALE-FREE!



Install the Butler De-Scaler in the top hose (or top of radiator if there's no baffle plate)—and its *atom-o-lytic* action will stop all *hot spots* • *radiator boil-overs* • *waste of gas and oil* • *excessive carbon deposit* • *water pump damage* • *thermostat inefficiency* caused by scale and rust in the water and on the metal.

The Butler De-Scaler's *atom-o-lytic* action* precipitates minerals from the water and dislodges rust and scale from the metal surfaces. Once the solids have dropped to the bottom of the system and have been removed by draining . . . the water *stays* clean, and so does the metal. Heat transfer operates as it should—the water dissipates heat easily and the engine runs cool.

DON'T WAIT UNTIL YOU CAN SEE TROUBLE!

Scale starts forming and corrosion starts eating at the metal with the first turn of the engine . . . scale rapidly covers over the metal to prevent efficient heat transfer.

Corrosion wears away the metal and creates tiny particles that can severely damage water pump, thermostat and other parts.

By the time the situation is so bad that the radiator boils over—so much damage has already been caused that you have a big repair bill staring you in the face.

So install the Butler De-Scaler *before* trouble starts. You can be sure of long-time protection without attention—no periodic chemical treatment, no dilution to worry about, safe to use with anti-freeze and stop-leak.

Keep the fleets rolling . . . eliminate lay-ups for back-flushing and boiling-out . . . avoid repairs due to scale and corrosion . . . join the hundreds of fleets from coast to coast that are making Butler De-Scalers standard equipment. Order right away.

*Interaction between silver-plated spring and special Bettermetal core when immersed in mineral-carrying water.

Copyright 1946 Edgar M. Butler

GUARANTEED

for One Year or 25,000 Miles

(One Year or 1000 operating hours in tractors)





NOT JUST AN "Inhibitor"

IT'S A SCALE AND RUST

ELIMINATOR

Automotive Model ATI

BUTLER COOLING SYSTEM De-scaler

AND RUST ELIMINATOR

$4.95 EACH

Manufactured by Butler Engineering Company, P.O. Box 1699, New Orleans 11, La. Manufacturers of water correction equipment for automotive and industrial requirements—hot water, steam, Diesel. Butler De-Scalers are patented; other U. S. and foreign patents pending.

$2.97 each in lots of 12 in U. S. A.

CURE YOUR COOLING SYSTEM TROUBLES Don't NURSE them!

ORDER TODAY →

BUTLER ENGINEERING COMPANY,
P.O. Box 1699, New Orleans 11, La.

Gentlemen: Please ship (fill in quantity**) . . . . . Butler De-Scalers @ $4.95 (@ $2.97 in lots of 12) to:

COMPANY.....

STREET.....

CITY.....ZONE.....STATE.....

☐ Check or money order enclosed ☐ Ship C.O.D. ☐ Bill open account

MY JOBBER IS.....

**Systems having a capacity greater than 30 quarts require one unit for each 30 quart capacity or fraction thereof. Operators of large Diesel engines should write for recommendation of proper unit to fit equipment.

IHC Point System

(CONTINUED FROM PAGE 148)

Taking each of the fatigue factors in turn and referring to Table I for point values, the rating would be assigned approximately as follows:

TYPE OF TERRAIN — Since operation is within city limits, good roads may be expected. 1 point.

ROAD SPEED — Specified at 25 m.p.h. No points.

TYPE OF LOADING—By conveyor or hopper. Moderate shock loads may be expected. 2 points.

NATURE OF LOAD—Does not diminish since it is carried from yard to customer. Classified static. 2 points.

GEAR SHIFTING — Normal amount may be expected. No points.

TOTAL is 5 points, which, from Table II, puts the operation in Class B; allows additional load of 20 per cent. Adding this amount to the original rating of 16,500 lb. we come out with a total of 19,800 lb. as a safe and economical limit for the vehicles.

Reasonable Judgment

OBVIOUSLY reasonable judgment must be exercised in assigning the exact point values for each operation. While type of terrain and road speed are usually self evident, the loading factor may be subject to rather fine distinctions. A power shovel, for instance, could conceivably dump an entire load in a single stroke, in which case the maximum point value should be assigned. On the other hand, an undersized shovel would produce much less strain and a point value of 4, 3 or even 2 might be assigned.

Similarly in considering the nature of the load and the amount of gear shifting considerable latitude should be allowed. Habitual back-tracking empty might outweigh the fact that the outgoing load remained static, and the amount of gear shifting would be influenced both by the number of starts and stops and by the grades expected.

Tractor Trailer Operation

THE point system may also be applied, in the same manner, to the considerably higher *combination* g.v.w. rating when the truck is to be used in tractor trailer service. In this case, however, certain additional factors must be considered.

According to IHC engineers, the four basic requirements of a satisfactory tractor unit are:

1. Sufficient horsepower to negotiate hills at reasonable speeds.
2. Sufficient carrying capacity on the drive axle.
3. Sufficient torque capacity in the rear axle drive members for pulling the combined weight.
4. Sufficient weight on the driving axle to provide the necessary traction for the roads over which the unit will operate.

The point system will provide a weight formula that is both satisfactory and within safety limits to meet the requirements for carrying capacity and torque (Items 2 and 3 above). But horsepower and traction (Items 1 and 4), being relative factors which vary widely in different sections and under different circumstances, must be considered as secondary factors outside the scope of the point system.

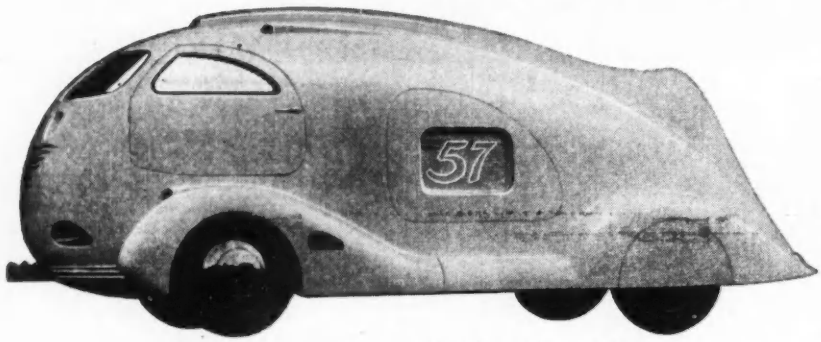
END

(Please resume your reading on P. 64)

TO HELP YOU...

Mr. FLEET OWNER!

Here's what HART offers...



Hart parts and sections used in New Promotion Car

A single source, a complete service—engineering and manufacturing parts for truck bodies, truck cabs, trailers, buses, and special equipment.

• • • • • THIS INCLUDES

1 Styling
2 Body Design
3 Tool Design
4 Die Models
5 Sample Job
6 Tools
7 Standard and Special Parts, Panels, and Sections.

You and your body builder should check with Hart—use this service. You will gain substantial savings, get custom styling.

WEST COAST DISTRIBUTOR
Ideal Hardware and Supply Company
3050 Leonis Blvd., Los Angeles, Calif.

WRITE FOR FULL INFORMATION TO DEPT. "C"

HART PRESSED STEEL CORPORATION
ELKHART, INDIANA
SERVING FLEET OWNERS AND THEIR BODY BUILDERS WITH NEW DESIGNS



Save your fleet a load of trouble!

Right now — some of your units may be headed for breakdowns. That's extra serious these days . . . better locate the trouble *fast* — to save your fleet a load of trouble. Valvoline "Fleet Lab," by analysis, can detect the trouble and suggest the remedy.

Your first move is to change to Valvoline Motor Oil for maximum protection. Then send samples of crankcase drainings to Valvoline "Fleet Lab" for analysis. Valvoline engineers are experienced in practical maintenance. They can give you valuable advice on when to drain and how to improve operating methods.

Hundreds of fleets depend on advice from Valvoline "Fleet Lab." Ask your Valvoline man how this service can be obtained free—or write.

VALVOLINE

FLEET CONTROL LABORATORY SERVICE

FREEDOM-VALVOLINE OIL COMPANY

Dept. 41C Freedom, Pennsylvania



Mufflers Must Be Muffled

(CONTINUED FROM PAGE 38)

price considerably; estimates varying from 50 per cent, at the lowest, to five or even 10 times present costs. Within this latitude it seems reasonable to provide an enormous increase in life without excessive cost penalty.

The problem of muffler life for trucks is quite different than for motor cars, as one of the muffler experts explains it. In passenger cars the muffler fails mainly because of the corrosive effect of condensation of water and acids which destroys steel through rusting. Truck and bus mufflers suffer little, if any, from this cause since they operate continuously. What does the damage on the big jobs is the terrific heat in the exhaust gases, frequently of the order of 1400 deg. F. and higher. It burns up ordinary carbon steel and causes heat fatigue—so it breaks up or curls up. The same expert claims that the best material for general purposes is cold-rolled steel of at least 18 gage. He feels that aluminum-clad or zinc-clad steel will melt off in a short period of running, although this statement is refuted by others.

Generally speaking, the experts recommend the use of stainless steel, alclad steel, and terne plate, in that order. A prominent truck engineer tells us they are using aluminum-clad steel in all cylindrically shaped parts and terne plate for the formed ends. This construction was first used in military vehicles and has been practically immune to corrosion.

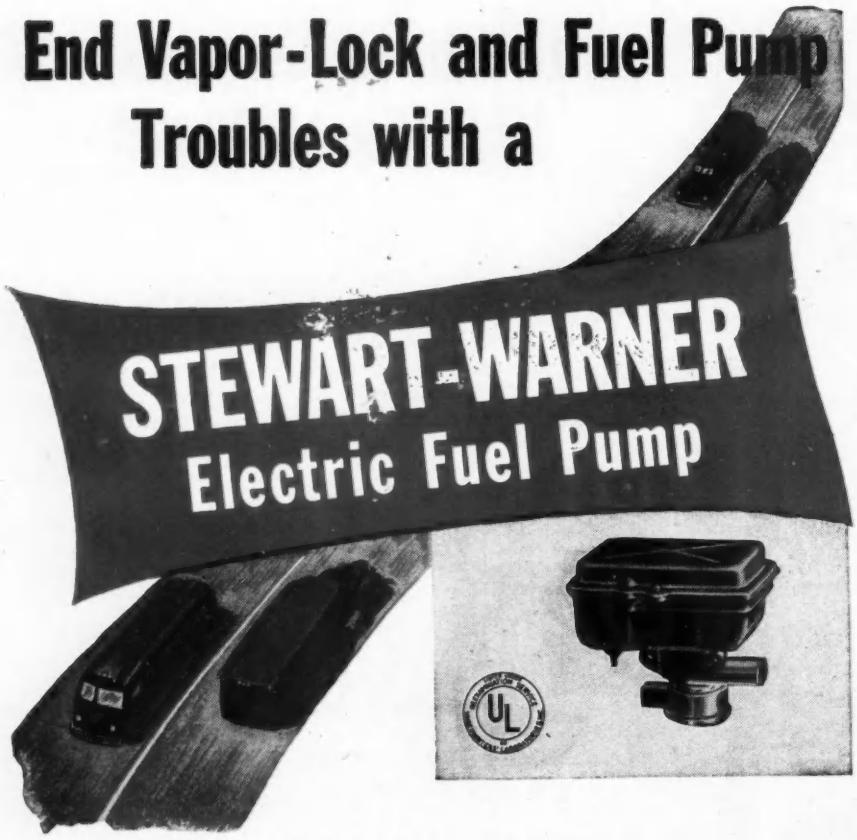
A muffler engineer suggests as the first choice Inconel, a special nickel alloy highly resistant to high temperature; then, aluminum-clad steel; and stainless steel. He estimates that alclad steel will increase cost by about 40 per cent while Inconel may run the price up to 10 times as much.

Other types of materials have been suggested, including enameled sheet but such coatings still require considerable experimentation to determine their usefulness. In this connection, we quote briefly from the paper, "Navy Diesel Engine Research" by W. F. Joachim, presented at the recent SAE Annual Meeting. According to Mr. Joachim:

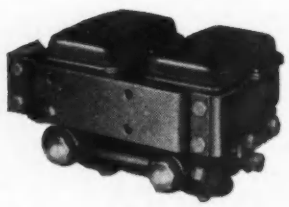
"Corrosion-resistant coatings for these mufflers must withstand rigorous operating conditions such as exhaust temperatures in some installations up to 1200 deg. F., the corrosive action of wet exhaust gas and hot sea water, and severe thermal shock. Approximately 150 protective coatings have been investigated for this service during many 500 to 2000-hr. tests in both wet and dry diesel engine exhaust gases. Galvanizing has been inadequate for long service. Some phenolic resins have excellent thermal shock and corrosion resistance, but fail at temperatures in excess of around 500 deg. The most generally suitable coatings to date are certain porcelain enamels, which have given exceptional operating results, but are sometimes difficult to apply uniformly on welds and sharp edges and are subject to chipping by thermal and mechanical distortions. The search for corrosion-resistant coatings is still in progress, and it is hoped to further improve the best available porcelain enamels or to discover other more satisfactory coatings."

The various points discussed lead

End Vapor-Lock and Fuel Pump Troubles with a



- Helps maintain tough schedules.
- Insures quick starting in any weather.
- Operates only when needed.
- Reduces operating costs.
- Delivers a minimum of 15 gallons of gas per hour.
- Available for 6 or 12 volt installations.



110-P DUAL PUMP

• Dual fuel pump installations are recommended where gasoline mileage is less than 5 or 6 miles per gallon. Each pump in a dual unit may be wired to a separate switch. By using one pump in a dual unit, 30% greater fuel delivery will result. The idle unit acts as a booster as well as reserve pump. Stewart-Warner Corporation, 1876 Diversey Parkway, Chicago 14, Illinois.

to several specific recommendations, without which the problem at hand surely will stagnate or run fleetmen smack into punitive regulations.

Specific Recommendations

First, we recommend the formation of a cooperative industry group under the leadership of the SAE or some other national group composed of representatives of the fleet operators, truck manufacturers, muffler makers, and public agencies that write and enforce the laws. This group would spark-plug a research project leading to a final solution and establishment of accepted ground rules. To this group, we suggest (1) the establishment of an acceptable noise level for exhaust systems of heavy-duty vehicles; (2) development of a coordinated exhaust system; (3) a project on the control of smoke and fumes. (These suggestions are outlined more fully on Page 37—Ed.)

We believe such a program is practical and will lead to a solution acceptable to everyone concerned, if handled properly and in engineering fashion. Moreover, the fact that such a program is placed in effect may be sufficient deterrent to the wave of regulatory proposals now under way, provided work is started quickly and under proper and recognized auspices.

END

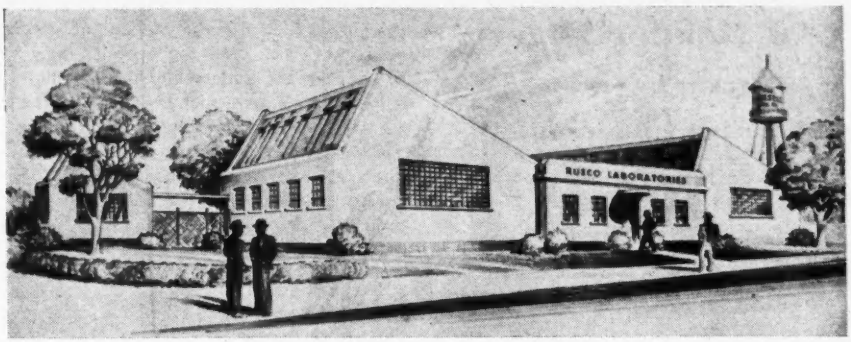
(Please resume your reading on P. 39)

NEW RUBBER RECORD

The rubber industry also set a new record in 1946, consuming slightly over a million long tons of natural and manufactured rubber, according to a release from Goodyear Tire & Rubber Co.



Airminded Mr. & Mrs. Garret W. Beckley of Beckley Livestock Transport Co., Stockton, Cal., took delivery recently of four-place NAvion with which they plan to rush replacement parts to disabled company vehicles



Russell Mfg. Co. (Rusco brake lining) has recently completed this ultra-modern laboratory for mechanical testing of linings, at Middetown, Conn.

Make It Easy to Drive In the "Economy Range"*



STEWART-WARNER Motor-Mile Tachometer

*Every vehicle has an "Economy Range," the engine speeds at which it operates with greatest efficiency. This range is clearly indicated by stationary red markers on the Stewart-Warner Tachometer face dial.

By keeping engine speeds within this range your driver's job is made easier—you save up to 25% on fuel. Oil consumption is also reduced.

Because the Tachometer records all engine revolutions—idling as well as traveling—you have an accurate basis for service which cuts maintenance costs as much as 25%.

Help your men do a better job by installing Stewart-Warner Motor-Mile Tachometers with Economy Range on every truck and bus in your fleet.

For complete details, contact the nearest Stewart-Warner jobber, or write Stewart-Warner Corp., 1876 Diversey Parkway, Chicago 14, Ill.

CCJ Reader Digest

(CONTINUED FROM PAGE 35)

Protective Undercoaters



by BART RAWSON

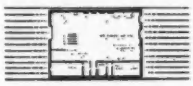
Associate Editor, Commercial Car Journal

IT IS our guess that you will be hearing a lot about undercoating materials. By protecting underbody surfaces from rust and the abrasive action of flying debris they can save the fleetman money. In addition the undercoater deadens noise, helps insulate and seal the cab and may even be used on the engine pan to bring up crankcase temperature in the cases of stop and start delivery vehicles.

The material costs from $1.00 to $1.50 per gal. and it takes about 8 gal. to undercoat the average passenger car. The weight is about 40 lb. It is sprayed on to thickness of ⅛ in. using either a pressure tank of pump which fits on container and a standard production gun with ¼-in. orifice.

Undercoater may also be used on hoods and valve cover to deaden engine noise, as a rust preventative inside dairy bodies and in special applications such as battery carriers and gas tanks. (See page 68).

IHC System for Figuring Maximum G.V.W.



HOW much can a given truck carry? What constitutes an over load?

To International Harvester goes credit for a new plan which provides a yardstick for measuring variations in operating conditions. Marked distinction is drawn between the truck which will be used as a city street sprinkler, for instance, and the same vehicle which will operate as a dump truck in severe off-highway tasks. Assuming that both trucks have a g.v.w. rating of 20,000 lb., the city street sprinkler could safely and economically carry about 6000 lb. more load than the dump truck and still not be overloaded.

The International plan is based on a point rating of fatigue factors which assign specific values to varying conditions in these five categories: 1. type of terrain; 2. road speeds; 3. method of loading; 4. nature of load; 5. amount of gear shifting.

With these variables in mind, International Harvester has set up point values which are listed and explained on Page 63.

Mufflers Must Be Muffled



by JOSEPH GESCHELIN

Detroit Technical Editor, Commercial Car Journal

NOISY truck operation is one of the industry's foremost public relations problems. Something must be done about the noise if restrictive legislation is to be avoided.

The muffler problem is two-fold:

1. Can truck mufflers be made acceptably quiet without penalizing power output?

The majority opinion of the experts is—YES, providing there is established a definition for acceptable noise level, and provided there is agreement as to allowable back pressure in the exhaust system.

They feel that truck exhaust can be quieted—within reason—on the same scale as motor cars. See Page 36.

2. What can be done to increase muffler life? The group of experts is agreed that a lot can be done to make mufflers last as long as do other parts of the vehicle. They all agree that the solution will up the price considerably; estimates varying from 50 per cent, at the lowest, to five or even 10 times present costs. (See page 36.)

END

(Please resume your reading on P. 36)



My advice to all repairmen is to stock these two Hygrade Assortments, like I did, and be prepared to regasket and install a new needle-valve-and-seat in every carburetor after a motor or tune-up job.

You accomplish three things when you do this: You insure your own work—you insure your customer of top carburetor performance—and you round up a lot of extra dollars of profit.

If you are not getting your share of this business it's your own fault. It's there, waiting for you.

CPA-156. ASSORTMENT OF GASKET PACKETS to take care of Ford, Chevrolet, Plymouth, etc. Contains 50 packets, 5 of each number. Each packet contains a complete set of gaskets.

CPA-218. ASSORTMENT OF NEEDLE VALVES AND SEATS to fit Ford, Chevrolet, Plymouth, Pontiac and others. Contains 24 needle valves and seats in 12 styles.

From your jobber

HYGRADE PRODUCTS CO., INC.

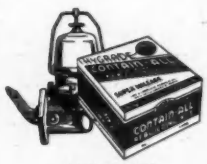
35-35 Thirty-fifth Street, Long Island City 1, N. Y.

HYGRADE

REPLACEMENT PARTS

Hygrade Line AUTOMOTIVE PRODUCTS

• • ENGINEERED FOR OLD UNITS • •



FUEL PUMPS KITS AND PARTS



CARBURETOR KITS AND PARTS



FILTERS—COMPLETE LINE



SPEEDOMETER CABLES—CASINGS—PARTS



SHOCK LINKS BUSHINGS AND PARTS



FUEL LINES AND FITTINGS

•

TOOLS AND TESTERS TO COVER ALL HYGRADE PRODUCTS

•

ASSORTMENTS FOR EVERY NEED

What's The Limit?

Fourteen thousand feet in the air, scientists dropped pellets of dry ice into a cloud and created a snow storm. *Now man can make snow fall where he wants it!* Will we soon create great reservoirs of moisture for arid regions by storing snow in the hills? What's the limit?



IS *Porous Chrome* THE ENGINE-LIFE PISTON RING?

Even after more than 7,000,000 miles of road tests in all types of service from door-to-door delivery to the steady grind of cross-country hauling we don't know the final answer. These road tests *did* prove that POROUS CHROME [VAN DER HORST PROCESS] multiplies piston ring life by four—*even five!* Proved that the fine honing action of these rings causes the entire set to seat within the first hour of operation, thus eliminating the costly wear of the break-in period. And, they proved that American Hammered Porous Chrome rings *reduce cylinder wear by half!*

Cut maintenance costs and stretch the time between engine overhauls by installing these amazing rings in your truck or bus engines. Call your American Hammered piston ring jobber *today!* Koppers Company, Inc., Piston Ring Division, Box 626, Baltimore 3, Maryland.

K
KOPPERS



American Hammered Piston Rings

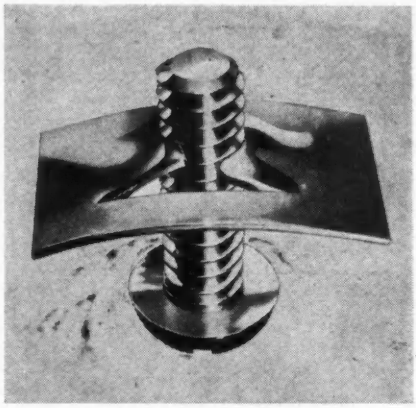


New Products

(CONTINUED FROM PAGE 59)

P171. New Speed Nuts

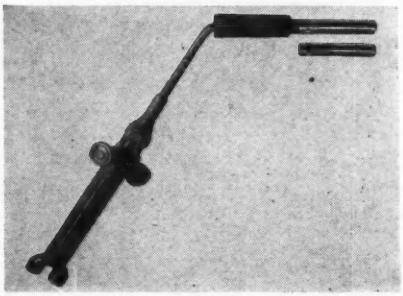
A new low-priced line of heat-treated spring steel SPEED NUTS has just been announcd by Tinnerman Products, Inc., Cleveland. This new line comprises all sizes required to fit the ten most popular sizes of machine screws and sheet metal screws. Known as the C7000 series, the new line has been engineered to a precision formula based upon the diameter and strength of the screw with which it is used. As a result, they are more compact, withstand higher torque tightening, and provide greater tensile strength.



Use Free Postcard for More Details.

P172. Oxy-Acetylene Tips

A handy new accessory which affords double-duty for all oxy-acetylene welding torches has been announced by Cesco Products, Inc., Chicago. Known as the Cesco puddler, this new unit fits over the end of any standard welding torch tip and, used with acetylene alone, provides an ideal flame for body soldering, tinning, silver soldering and heating jobs. Two tips are furnished with the kit. One for light duty soldering and one for body soldering.



Use Free Postcard for More Details.

P173. New AC Welder

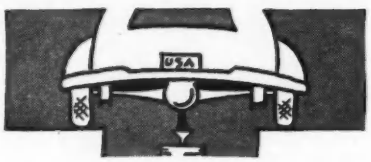
The Lincoln Electric Co., Cleveland, announces a new "Fleet-Arc" AC welder featuring an "Arc Booster" which augments the current the instant the arc is struck. This added feature has been accomplished without the use of special high frequency devices or higher voltage.



A selector switch on the front of the welder governs the amount of booster current to be used in striking the arc. This

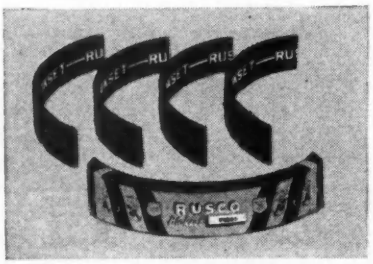
(TURN TO PAGE 160, PLEASE)

CAR OWNERS WANT TO KNOW
WHAT'S THE REASON?



Why should extreme pressure lubricants be drained off and replaced even when the gears need only a small addition?

ANSWER: Extreme pressure lubricants have different bases and should never be mixed.

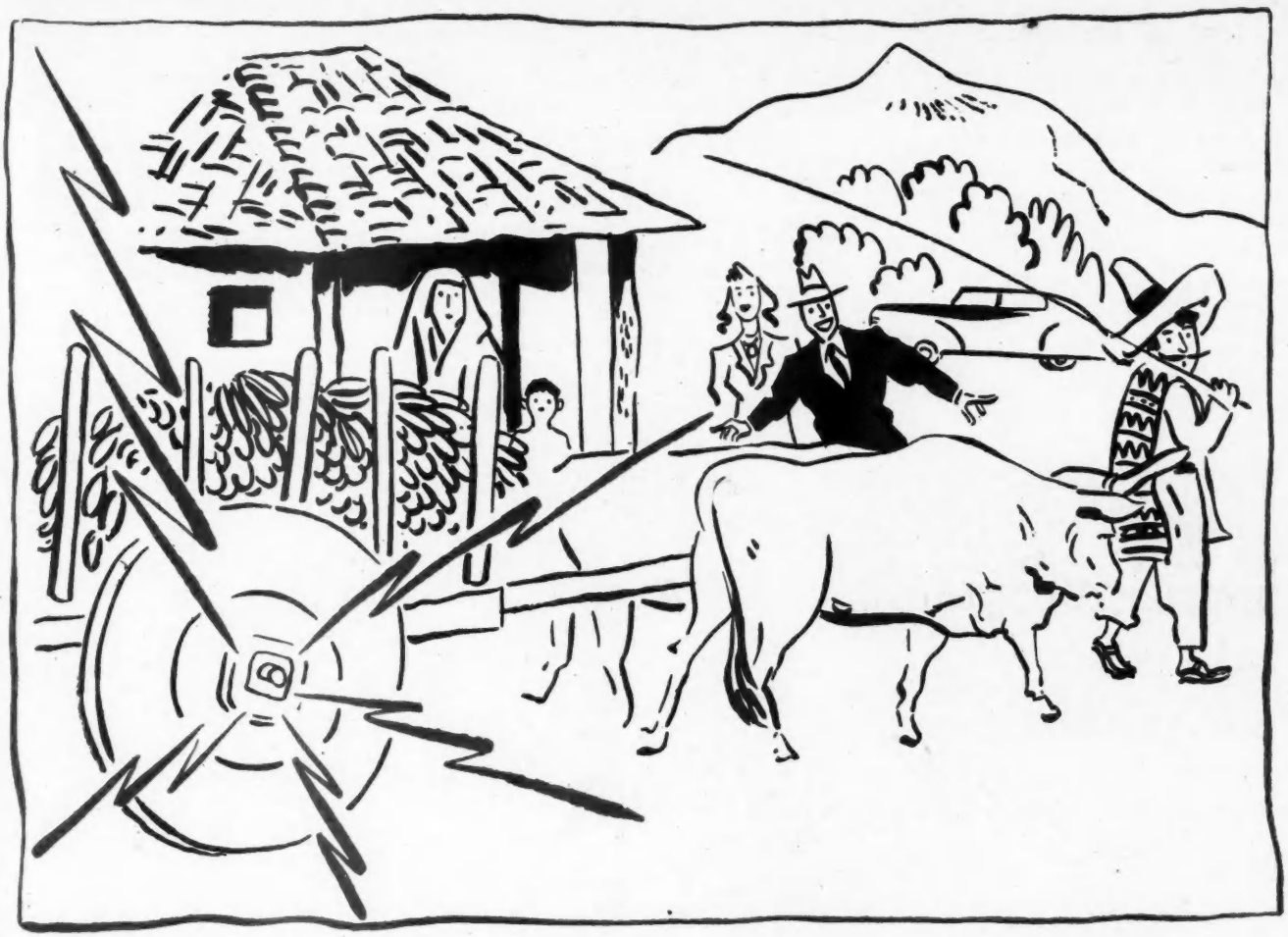


Why does the Rusco Blokset give maximum performance with minimum wear under severest operational conditions?

ANSWER: The Rusco Blokset is made from a scientifically developed material of exceptional toughness, reinforced with a wear-resisting wire back and drilled, countersunk and ground to exact tolerances for peak efficiency.

RUSCO
BRAKE LININGS
CLUTCH FACINGS

"THE STANDARD OF THE INDUSTRY"
THE RUSSELL MANUFACTURING CO., Middletown, Conn.



"Señor, he has lost his lard pail!"

Any grease is okay for oxcarts.
But not for motor vehicles!

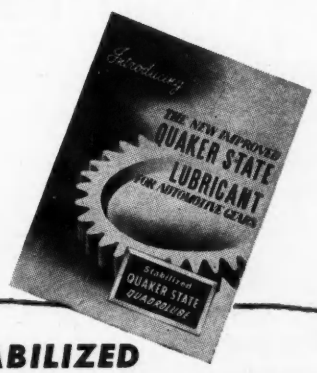
YEAR by year, automobiles, trucks, buses, and taxicabs are faster, harder-driven. Tractors do heavier tasks, are harder-worked. Drives and transmissions are of new design, more costly, need better lubrication, better protection.

To meet this need, QUAKER STATE has developed gear lubricants that are entirely new in formula and characteristics. They are more resistant to heat and pressure—form less sludge, gum, "varnish"—and provide more efficient protection against corrosion.

Naturally, their performance is *news!*

For evidence, send for the new QUAKER STATE booklet: "Introducing the New Improved Quaker State Lubricant for Automotive Gears — Stabilized Quaker State Quadrolube."

Send for this booklet!



STABILIZED

QUAKER STATE

QUADROLUBE

AND SUPER QUADROLUBE*

*Specially compounded for the lubrication of hypoid gears.

•

No gear lubricant can be better than the oil it contains. The base oils in Quaker State gear lubricants are made from pure Pennsylvania grade crude oil. Quaker State offers a complete line of automotive lubricants scientifically made from the finest raw materials obtainable.

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PENNSYLVANIA

New Products

(CONTINUED FROM PAGE 158)

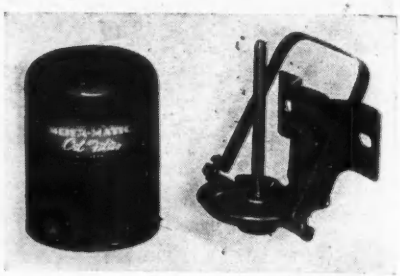
provides a complete range of striking intensity to suit requirements in the welding of thin sheets or heavy plates, making of tack welds, or in the use of various types and sizes of electrodes. It enables the operator to achieve the maximum depth of penetration in every job, and has the added facility of attaining the maximum depth at the beginning of the weld.

Use Free Postcard for More Details.

P174. Quick-Change Filter

Volume production of a new type oil filter and filtering element is announced by Meier, Inc., Detroit. Two types of the new "Meier-Matic" filters are available, one a conventional-type case with replacement element, the other a sealed throw-away filter unit which may be changed without disturbing oil lines.

Both types feature a molded-block-type filtering element made of a highly-absorbent fibrous composition designed to insure uniform density control and the elimination of channeling of unfiltered oil. The element is said to filter all mineral lubricating oils, including deturgents, without affecting the additives or impairing lubrication qualities of the oil.

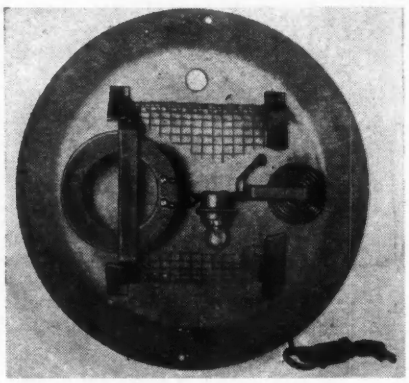


The featured model 800 throw-away type filter is almost instantly changed, merely by loosening two screws to release the retaining band, which when pushed back permitting the filter unit to be lifted off and replaced.

Use Free Postcard for More Details.

P175. Electric Heater

A new electric engine heater with 250-watt, 110-volt ring-type heating element and a snap action thermostat which makes



it completely automatic is announced by H. D. Campbell Co., Rochelle, Ill. It may be set at any desired temperature and placed under the hood or under the engine for cold weather starting.

Use Free Postcard For More Details.

P176. Wheel Balance Tool

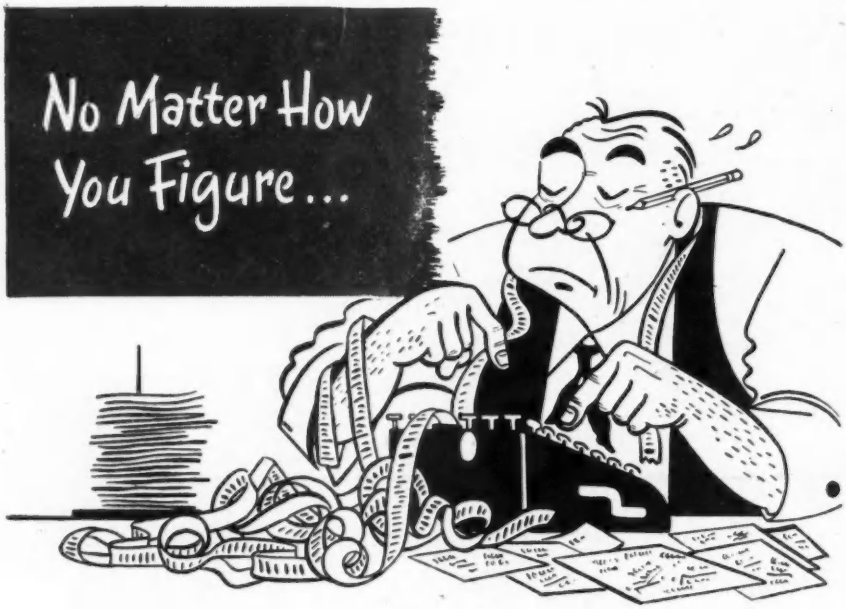
A new tool known as "The Gimmick," said to be capable of applying and removing every known type of wheel balance



weight, is offered by the Harley C. Loney Co., Detroit. The tool is designed to prevent damage to the weight thereby permitting reuse. Cantiliver action assures positive grip.

Use Free Postcard For More Details.

(TURN TO PAGE 218, PLEASE)



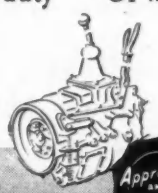
The Clark 5-speed Transmission Can Cut Your Costs

Naturally! Because a Clark 5-speed Transmission *saves* you money.

It makes a Ford or Chevrolet comparable to a 2½- or 3-ton truck having a five-speed transmission as standard equipment . . . enables your trucks *to haul heavier loads in shorter time.*

When used for on-and-off the highway trucking, heavy-duty tractor use, fast hauling jobs or bus service, the Clark 5-speed Transmission helps keep costs down. Its five forward speeds provide the exact power and speed needed for virtually any condition of load or road.

See your truck dealer or local Truckstell distributor for details about how the Clark 5-speed Transmission can cut your costs. Or write The Truckstell Company, Union Commerce Bldg., Cleveland 14, Ohio.

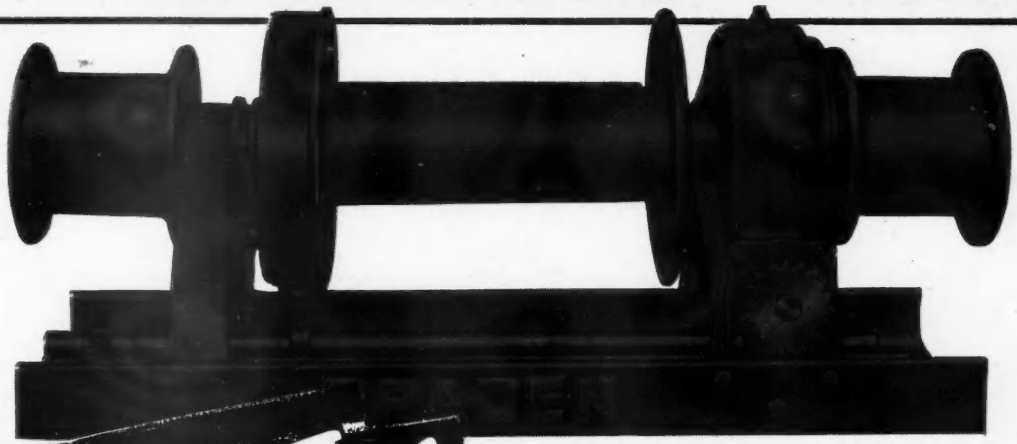


Approved and Distributed by TRUCKSTELL
SPECIALIZED EQUIPMENT FOR PLUS PERFORMANCE

CLARK FIVE-SPEED TRANSMISSION

Manufactured by **CLARK EQUIPMENT COMPANY, Buchanan, Mich.**

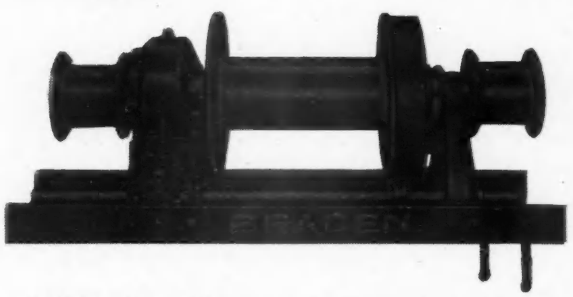
New BRADEN TRUCK WINCHES



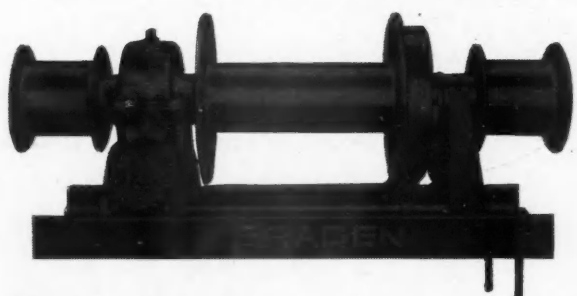
FOR *Trouble Free*- PERFORMANCE..

MODEL M9-18B Safe Working Load of 18,000 lbs.

Operators are continually telling us how unusually well Braden Winches stand up year after year. The fact is, Braden Winches ARE designed to provide trouble-free performance. Each moving part is precision-built to exacting standards. Timken Adjustable Tapered Roller Bearings are used on all worm shafts. The New Oil-Cooled, Fully Adjustable, Automatic Safety Brake is engineered to provide a degree of safety never before attained in a truck winch; and its wide range of automatic action *eliminates frequent adjustments.* This extreme care in designing and manufacturing enables Braden to provide the strongest guarantee of any winch on the market to every purchaser of the NEW Braden Truck Winch.



MODEL M6-15B Safe Working Load of 12,000 lbs.



MODEL M12-18B Safe Working Load of 25,000 lbs.

BUY BRADEN - They are Safer

BRADEN WINCH COMPANY
1001 East Admiral Boulevard

BRADEN *Winches*

TULSA 3,
Oklahoma

LESS BULK -- COOLER RUNNING



. . . another reason why Cooper Truck Tires make payloads more profitable

Cooper goes one better when it comes to trimming away bulk for cooler running. Not only does Cooper build a stronger, more compact tire of fewer plies . . . but Cooper construction also gives positive protection against growth of the cord body in service.

Armored Rayon Cord is the Cooper development that makes possible a truck tire that's all muscle, a tire with better load carrying capacity — even though it has fewer plies to generate heat. And *Distributed Stress Construction* is the Cooper development that keeps truck tires from building bulk in service. This exclusive feature adds extra strength, uniformly distributes tire-killing stress and strain, enables the cord body to retain its strength and stretch much longer.

Naturally, a tire with less bulk runs cooler — gives more original miles, more recap miles too. See your Cooper dealer and arrange to give cooler-running Coopers a try. Put them on your toughest hauls, match them against any other brand. See for yourself why *Cooper truck tires really make payloads more profitable.*



COOPER TIRE & RUBBER COMPANY

Factories at Findlay, Ohio



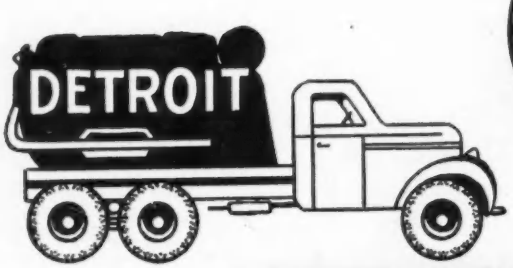
They carry the rolling loads

BOWER TAPERED SPHER-O-HONED ROLLER BEARINGS

In the major industries, wherever wheels turn, Bower Roller Bearings carry the rolling loads. Invisible but indispensable, they perform silently and faithfully the most important tasks in the mechanical world. There is nothing in industry that is finer in design, more accurate or more nearly perfect in performance than Bower Roller Bearings. Bower precision is measured in millionths of an inch.

BOWER ROLLER BEARING COMPANY • DETROIT 14, MICHIGAN

AN *Important New* NAME TO REMEMBER





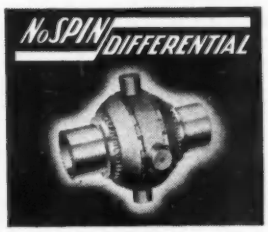




manufacturers of products you already **KNOW** *are* **BEST**



Converts Medium Trucks to Heavy Duty Six-Wheelers



Automatic Locking for Truck Axles

This is another way of telling you that

THORNTON TANDEM CO.

has changed its name to

DETROIT AUTOMOTIVE PRODUCTS *Corporation*

8701 GRINNELL AVE. DETROIT 13, MICHIGAN

Distributors: *in U.S.A.,* **TRUCKSTELL DISTRIBUTORS;** *Export,* **HERTHORNWAY EXPORT CORP.**

SLUDGE STOPS HERE



Longer Engine Life Starts Here

Fram Cuts Breakdowns Saves Motors, Delays, Money

Here's the picture of what Fram filters and cartridges do on the engines of your fleet. Fram oil filters remove dirt, dust, grit, sludge and abrasives from motor oil . . . thereby check trouble before it starts. And that means longer engine life, lower operating costs, higher profits for you!

FRAM Is GUARANTEED to Save You Money

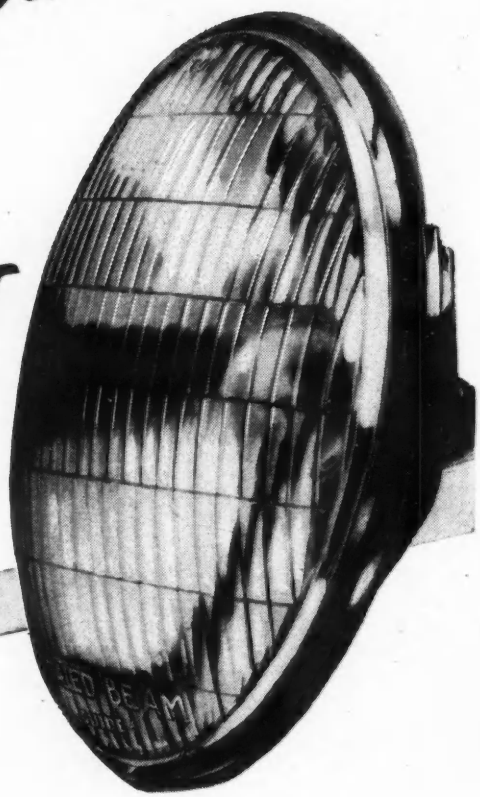
So confident are we that Fram will save you money, headaches and time that we make this unqualified guarantee: Put Frams on your fleet . . . operate for 90 days. If you are not satisfied that Fram oil filters save you many times their original cost . . . you to be the sole judge . . . we'll gladly refund your money!

There are no strings to this offer. You've nothing to lose . . . and much to gain. Why not give it a try? Call your Fram distributor now . . . start the Fram 90-day road test today! Fram Corporation, Providence 16, R. I.
In Canada: J. C. Adams Co., Ltd., Toronto, Ontario.

FRAM OIL & MOTOR CLEANER

Cleans the Oil that Cleans the Motor

When Guide Sealed Beam Units are IN DIM-OUT and BLACK-OUT are OUT!



Guide Sealed Beam units possess advantages that have led to their being used more widely as original equipment on cars, trucks and buses than any other Sealed Beam unit.

The features that make Guide units superior for original-equipment use make them superior for use as replacement units.

Follow the lead of the foremost bus and truck manufacturers—use Guide Sealed Beam units and get the double protection of *no dim-out* and *no black-out*.

NO DIM-OUT

Because Guide Sealed Beam units are sealed against dirt, dust and traffic film, they stay bright throughout their long life—maintain high efficiency without service or maintenance.

NO BLACK-OUT

Because there is a separate bulb within the sealed unit, Guide Sealed Beam units will not fail in case of a cracked lens—will light the way safely until the damaged unit can be replaced.

Safe Headlamps are "Correctly Aimed" Headlamps—Have Your Headlamps Checked Today

Guide LAMP
Division of General Motors
Anderson, Indiana

LET SAFETY SHARE THE RIDE—REPLACE WITH GUIDE

UNITED SERVICE MOTORS

GUIDE LAMP—A UNITED MOTORS LINE
Lamps and Service Parts Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

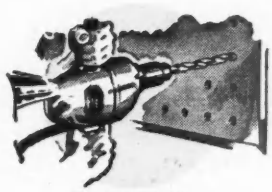
Handling Different Drilling Jobs Every Day?

HERE'S THE TOOL FOR YOU!



Black & Decker ½" Standard Portable Electric Drill

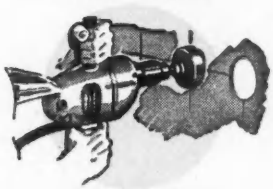
It Drives:



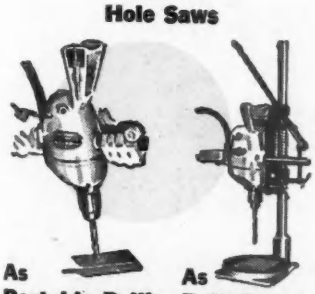
Twist Drills



Wood Augers



Hole Saws



As Portable Drill

As Drill Press

VERSATILE Black & Decker 1/2" Standard Drills make short work of the 100-and-1 drilling jobs automotive and tractor shops must handle daily. That means lower job costs and more savings for you!

Black & Decker 1/2" Standard Drills drive twist drills up to 1/2" in steel . . . wood augers up to 1" in hardwood . . . Hole Saws for cutting clean, round holes up to 3 1/2" diameter for installing radios and heaters. Make excellent tools for drilling out broken bolts and studs and for general use in body and chassis repair.

Moreover, Black & Decker 1/2" Standard Drills are equally productive when used as powerful drill presses! Mounted in a Black & Decker Drill Stand, they have 6-to-1 leverage to put on the pressure when needed . . . a smooth, positive feed for more precise work . . . one-hand operation that makes it easier to guide the workpiece.

Check your nearby Black & Decker Distributor today on these versatile Drills and for help on any tooling problem. Send for our free catalog for detailed information on over 100 Black & Decker Portable Electric Tools and their many accessories. The Black & Decker Mfg. Co., 632 Pennsylvania Ave., Towson 4, Maryland.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC **TOOLS**

A LOAD BEHIND IS A TRIP AHEAD

KINGHAM TRAILERS MEAN...

Profits



Check the records of firms operating Kingham Universal Trailers and you will find the most amazing story of continuous daily performance ever told in the trailer industry. These trailers mean PROFITS . . . and extra PROFITS . . . that keep operators smiling year after year.

The inherent sturdiness of Kingham Trailers that make for profitable trouble-free operation is due to skilled engineering based on understanding of Trailer uses—knowledge gained through years of building all types plus the finest plant and manufacturing facilities. You can depend on Kingham to maintain these cherished traditions.

These facts logically explain "why" so many firms are content to wait until Kingham Universal Trailers are *available again.

**Some models are near normal production now.*

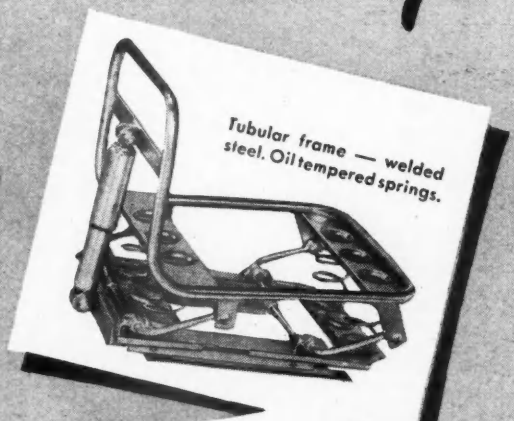
Kingham UNIVERSAL

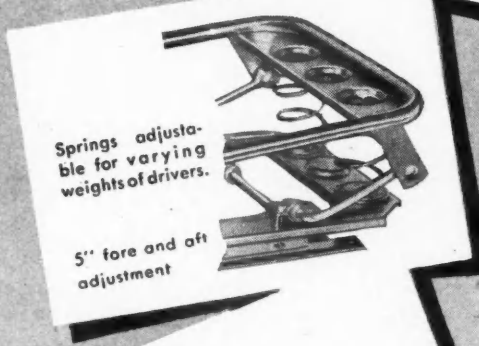
NATIONAL SALES . . . NATIONAL SERVICE

KINGHAM TRAILER COMPANY • INCORPORATED • LOUISVILLE, KENTUCKY

Smoothest Ride in Truck History!

The Bostrom Level-Ride seat is the last word in truck seat comfort. Hydraulic shock absorber . . . passenger car suspension under the cushions . . . rubber bearings . . . oil tempered springs . . . tubular steel frame . . . adjustment for various weight drivers, rough and smooth roads . . . five inch fore and aft movement for short and tall drivers—these features make for the smoothest ride in truck history. Proved by truck manufacturers, large fleets, and drivers. Guaranteed to meet your requirements. Order today through your dealer or direct.







No. 10 Bostrom Level Ride Seat ....$64.75 ea.
No. 10 Bostrom Level Ride in lots of six or more .....$59.50 ea.
No. 15 Bostrom Companion Seat (without hydraulic suspension) ....$28.50 ea.

BOSTROM MANUFACTURING CO.
Milwaukee 2, Wisconsin

High quality cushion materials made to outlast ordinary cushions six to one.

The Gwiazdas tried something new— Had no oil troubles all winter long!

In a recent interview at their Corbin Avenue Bus Service building, Walter and Bruno Gwiazda told of a new oil they had tried a short while back.

"We were having plenty of trouble with oil," the two brothers reported. "We were paying premium prices, and yet sludge was crowding around the valves and giving us trouble.

"Then a Gulf Man told us about Gulf Dieselube H.D.

"He told us how it would cost us much less to buy—how it had an active detergent that would keep our motors clean. Since we've been going along with this oil, it's done just that."



"Our best oil find in 27 years of business . . ."

Saves Money on Replacements

"We don't find varnish in our engines the way we used to. Our screens are clean, and there's no dirt in the pan. We don't seem to have trouble with condensation anymore — have cut way down on new, expensive replacements.

"And talk about body—this Gulf Dieselube H.D. really stands up under heavy, hard-pulling operation.

"You remember how tough last winter was. Well, we didn't have one bit of oil trouble all winter long. Any wonder we recommend Gulf Dieselube H.D.? It's the best oil we've used in 27 years of business."

• • •

At your service

At no cost to you, Gulf offers you this special service.

A Gulf Automotive Engineer—fully trained and experienced—will inspect your fleet and talk over your operation.

Then he'll show you how and whether Gulf Dieselube H.D. can cut your operating costs—increase your time between overhauls. There's no obligation.

Write to the Gulf Office nearest you. We will arrange to have an Engineer call on you at your convenience.

Do it today.

"Pulling hills both ways, each unit averages 204 miles per day," says Bruno Gwiazda, Vice-President of the Corbin Avenue Bus Service Inc., New Britain, Connecticut.

"And in 27 years of serving New Britain, we've never found another oil that stands up like Gulf Dieselube H.D."

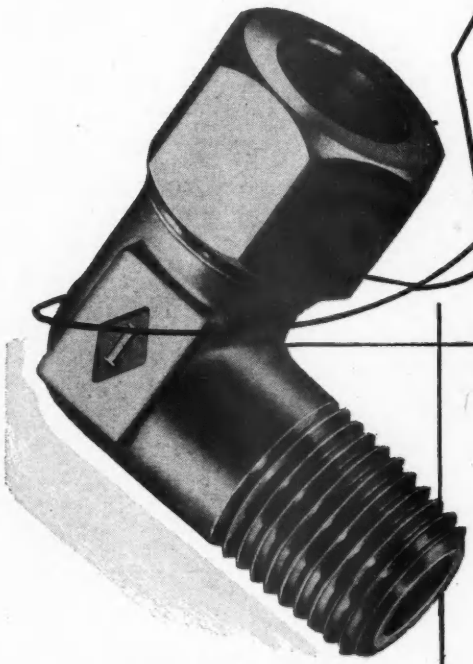


GULF

Discover GULF DIESELUBE H.D.

For Heavy-Duty Gasoline and Diesel Engines

Now... Finer because they're ☆ Forged



IMPERIAL TUBE FITTINGS
for gas, oil and brake line work.



FORGED FITTINGS ARE STRONGER

Brass forgings are over 80% stronger than brass castings — that's why forged fittings will withstand higher pressures.



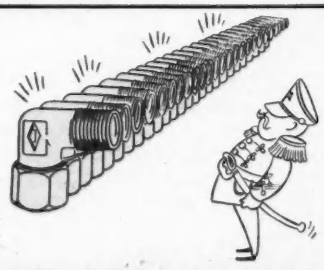
FORGED FITTINGS ARE TOUGHER

Forged fittings stand up better under hard knocks, mechanical shock, and vibration because forging concentrates fiber-like flow line structure of metal at points of stress.



FORGED FITTINGS ARE CLOSER GRAINED

The extremely close-grained structure of forgings assures against blow holes or other concealed defects and against seepage of even hard-to-hold materials.



FORGED FITTINGS ARE MORE UNIFORM

Dimensions of forgings are held within extremely close limits — far closer limits than are possible in the case of castings. This makes fittings easier to install.



DRYSEAL PIPE THREADS

Full length SAE Dryseal Pipe Threads are being incorporated on pipe thread ends. These threads make tight joints without pipe dope; are longer on sizes ¼" and over.

★ Dryseal Pipe Threads make tight joints without pipe dope. Note longer length.

☆ Elbow and tee bodies on Compression, Flared, Hi-Duty, Flex and Inverted Flared Tube Fittings are being converted to forgings. Straight fittings made from brass rod.

IMPERIAL announces new, finer tube fittings for gas, oil and brake line work. These new fittings have forged bodies on elbows and tees and SAE Dryseal Pipe Threads on pipe connections.

All the advantages above combine to bring you something far better in tube fittings. Now, more than ever before the Imperial Diamond "I" on fittings is your assurance of top quality.

THE IMPERIAL BRASS MFG. CO., 1209 W. Harrison St., Chicago 7, Illinois

Write for Bulletin No. 349 on Forged Fittings

IMPERIAL

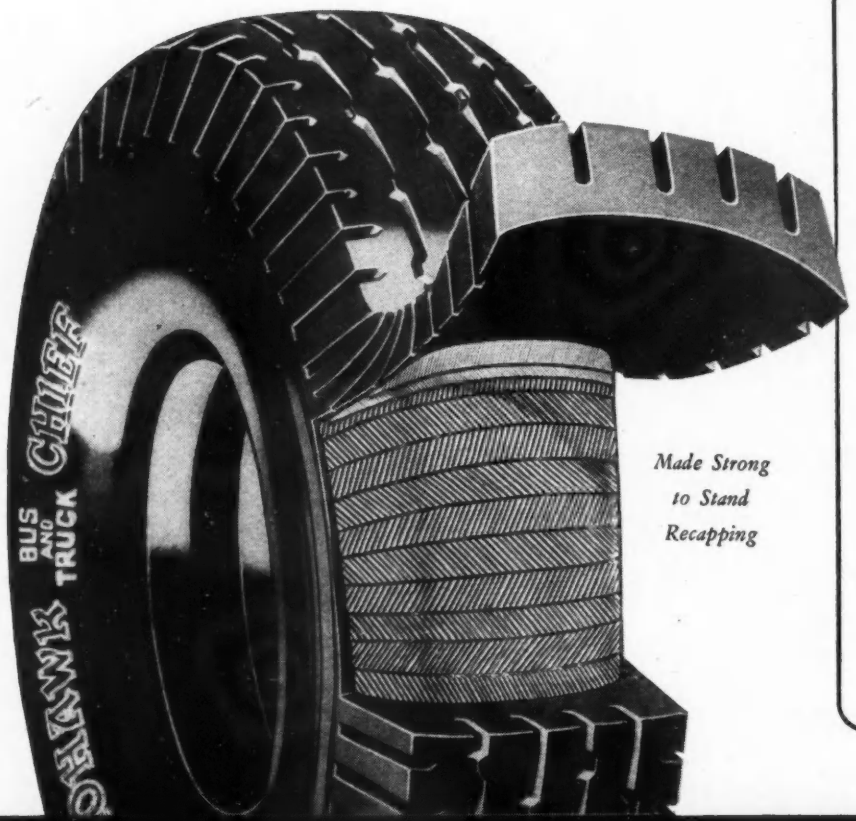
BRASS FITTINGS • FLEXIBLE FUEL LINES • TUBE WORKING TOOLS • BATTERY HYDROMETERS • BARREL FAUCETS • WELDING EQUIPMENT

SPECIAL MOHAWK Truck Tire SERVICE

CUTS TIRE COSTS WAY DOWN

24% 22% 20% 18% 16% 14% 12% 10% 8% 6%

YOUR independent Mohawk dealer looks after the tires on many truck fleets, large and small. His job is (1) to check customers' tires regularly and (2) to help operators obtain the maximum mileage that is built into these tough, long-wearing Mohawk Tires. When truck owners cooperate fully with Mohawk service men, the per cent of tire costs to overall truck maintenance costs goes way down. See your local independent Mohawk dealer today!



Made Strong to Stand Recapping

9 POINT MOHAWK SERVICE

Increases Mileage!

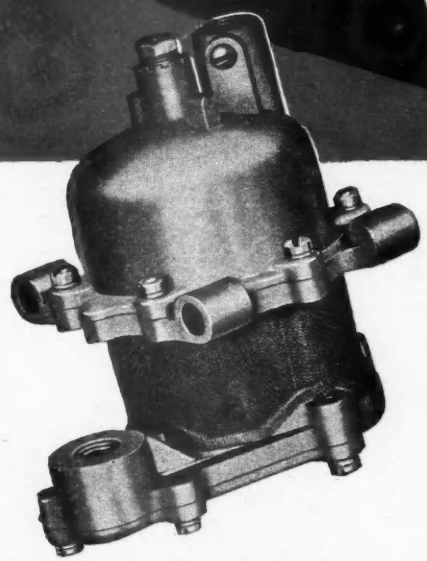
1. Tire Inflation
2. Dual Tire Mating
3. Wheel Alignment
4. Brake Adjustment
5. Proper Load
6. Load Distribution
7. Driving Speed
8. Frequent Examinations
9. Expert Retreading

THE MOHAWK RUBBER COMPANY
AKRON 5, OHIO

MOHAWKS GO FARTHER

CARTER
Electric Pusher Pump
Now Available In All
PRIOR *Safety Tanks*





Located at the bottom and inside the fuel tank, this motor driven centrifugal pump keeps fuel in the line under constant pressure. Since there are no valves between the pump and the carbureter, gas in the line drains back into the tank when the engine is stopped—eliminating flooding. Fuel for starting is supplied to the carbureter instantly.

For quick, easy installation, truck owners may now buy all models of Prior Safety Tanks equipped with the Carter Electric Pusher Pump. The Prior OB-Round Safety Tank is interchangeable—fits any truck, regardless of frame width or depth; no holes to drill in frame.

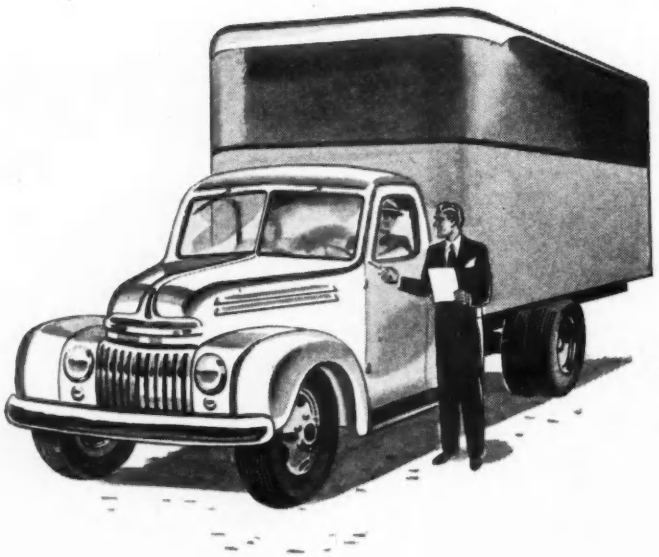
CARBURETER
TRADE MARK REG. U. S PAT. OFF.
MARCA REGISTRADA

CARTER CARBURETOR CORPORATION, St. Louis 7, Missouri

Division of American Car & Foundry Company

553

For Greater Safety...



CHECK... FOR GLASS YOU NEED

Make glass inspection a regular step in your fleet inspection. Provide your drivers with better road visibility by promptly replacing any cracked or discolored glass.

CHECK... THE GLASS YOU GET

Order glass replacements with genuine L·O·F Safety *Plate* Glass. This high-quality product is made of two panes of plate glass, ground and polished for maximum freedom from distortion and laminated with a sheet of clear, tough plastic. Make sure the glass in your fleet bears the stenciled identification "L·O·F Hi-Test Safety Plate Glass". Libbey·Owens·Ford Glass Company, 5537 Nicholas Bldg., Toledo 3, Ohio.



WHEREVER VISION IS IMPORTANT
USE L·O·F *Polished Plate* GLASS

LIBBEY·OWENS·FORD
a Great Name in **GLASS**

FEATURE FOR FEATURE

NO OTHER CLUTCH CAN EQUAL THE

Spicer *Brown-Lipe*

Because Spicer has devoted special engineering attention to *every* clutch operating requirement, the Spicer Brown-Lipe has an exclusive group of features that make it the most highly developed clutch on the market.

UNIFORM OVERALL PRESSURE. Through 360° of pressure plate • **SIMPLE SCREW THREAD ADJUSTMENT** • **LONGER BEARING LIFE.** Completely shielded release bearing • **NON-WARPING PRESSURE PLATE.** Made of heat treated alloy • **SMOOTH.** Flexibility of levers results in smooth pick-up • **NO CHATTER** • **LOW PEDAL PRESSURE.** Remains essentially constant throughout clutch life • **FEWER PARTS** • **INSULATED SPRINGS.** Not in contact with pressure plate; heat from plate cannot destroy their temper • **ECONOMICAL.** Delivered completely engineered—not necessary to design or purchase special transmission front bearing caps, clutch release bearings or housings . . .

SPICER MANUFACTURING
Division of Dana Corporation
TOLEDO 1, OHIO



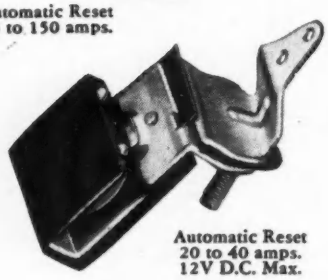
43 YEARS OF **Spicer** SERVICE

Transmissions • Torque Converters • Passenger Car Axles
Clutches • Parish Frames • Stampings • Universal Joints
Spicer "Brown-Lipe" Gear Boxes • Railway Generator Drives



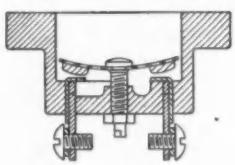
Manual Reset
(Weatherproof)
15 to 40 amps.

Automatic Reset
35 to 150 amps.



Automatic Reset
20 to 40 amps.
12V D.C. Max.

AUTOMATIC RESET



CLICK... IT OPENS when the circuit becomes dangerously overloaded.



CLICK... IT CLOSES automatically when circuit cools. Manual Reset is reclosed when reset button is pushed.

For Positive Electric Circuit Protection Use

KLIXON

CIRCUIT BREAKERS

KLIXON Circuit Breakers replace fuses with *permanent circuit protection.* They provide positive circuit protection without anything burning out and needing replacement. In addition, they prevent road delays due to lack of, or inaccessibility of, fuses.
Here's what they do —

(1) Carry full rated current as long as circuit is normal without nuisance tripouts.

(2) Open circuit should a harmful overload or short circuit occur preventing further damage or fires.

(3) Because there are no fuse clips to corrode, there is little if any voltage drop.

(4) Automatic Reset Breakers keep recycling, providing intermittent circuit operation permitting the vehicle to be driven to a repair station for repairs.

Easy to install, compact, Klixon Circuit Breakers are unaffected by vibration, motion or shock. They are available in many sizes and ratings with open or weatherproof cases.
Get the facts, today. Write for information and samples.

KLIXON

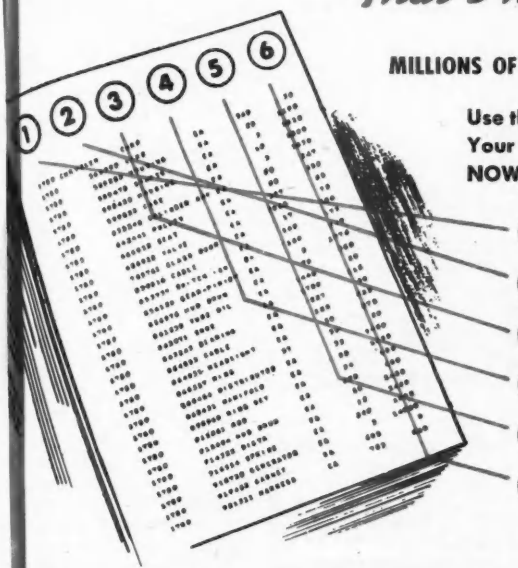
Spencer Thermostat Company, 1603 Forest St., Attleboro, Mass.

How to order TRUCK PARTS in 5 easy steps...



1. Make up your own list of what you want by manufacturer's part number. This will save you time.
2. Go to your nearest WAA Regional Office.
3. Ask for the Automotive Parts Section.
4. Examine the inventory.
5. Place your order.

That's how simple it is!



MILLIONS OF PARTS NOW BEING SOLD AT BIG DISCOUNTS!

Use this Catalogue as a BUYING AID to Check Your Requirements Against Stocks Available NOW . . .

1. **Mfr's. Code Number**
2. **Mfr's. Catalogue Part Number**
3. **Mfr's. Part Description**
4. **Unit of Pricing**
5. **Quantity**
6. **Mfr's. List Price**

The perpetual inventory book illustrated here is available at any of the 33 War Assets Administration Regional Offices, strategically located throughout the country. All the information you need, for ordering needed truck parts at huge discounts, is compiled in this compact volume—which is kept up-to-date by means of a revised inventory every eight weeks, with supplements on critical items issued every two weeks. You can tell at a glance what we have, how much we have and the manufacturer's list price.

This easy-to-use reference to millions of surplus truck parts is for your convenience in ordering. The parts listed were manufactured for all makes and models used by the armed forces. This information is available at the Automotive Parts Section in each WAA office, but is centrally compiled in Detroit.

Make full use of this up-to-date inventory to solve your parts requirements problem. You can place your order on the spot for prepaid shipment. Visit or write the Automotive Parts Section of your nearest WAA Regional Office at your earliest opportunity.

All orders are subject to existing priority regulations and to prior sale.

TRADE DISCOUNTS
(minimum sale—$500 net)

Discount off manufacturer's list price as shown in catalogue:

Fleet Owner (5 or more vehicles) 45%
Service Garage 50%—Vehicle Dealer 55%
Manufacturer, Distributor, Exporter 75%

WAA POLICY ON SHORT SUPPLY ITEMS

Some parts are in limited supply. When orders for such parts are received, the parts are allocated *equitably*. You know what that means—your chance to buy is as good as the next man's, for there are no preferred "old customers." It also means you can't expect to hit the jackpot on shortage items. We'll try our best to fill your order, but the other fellow has to have *his* share, too.

30% of parts in *short* supply will be held to fill orders from Federal agencies. Orders from other buyers will be filled in the following sequence:

(1) Certified Veterans of World War II
(2) Subsequent priority claimants
(3) Non-priority purchasers

A reserve of 10% of parts in *normal* supply will be held to fulfill the needs of priority claimants. Veterans of World War II should apply to their nearest WAA Regional Office for certification; the actual certificate must be attached to a Veteran's offer to purchase.

EXPORTERS:

Your business is solicited. If sales are conducted at various levels, you will be considered as a wholesaler. Any inquiries regarding export *control* should be referred to Office of International Trade, Dept. of Commerce, Washington, D. C.

OFFICE OF GENERAL DISPOSAL

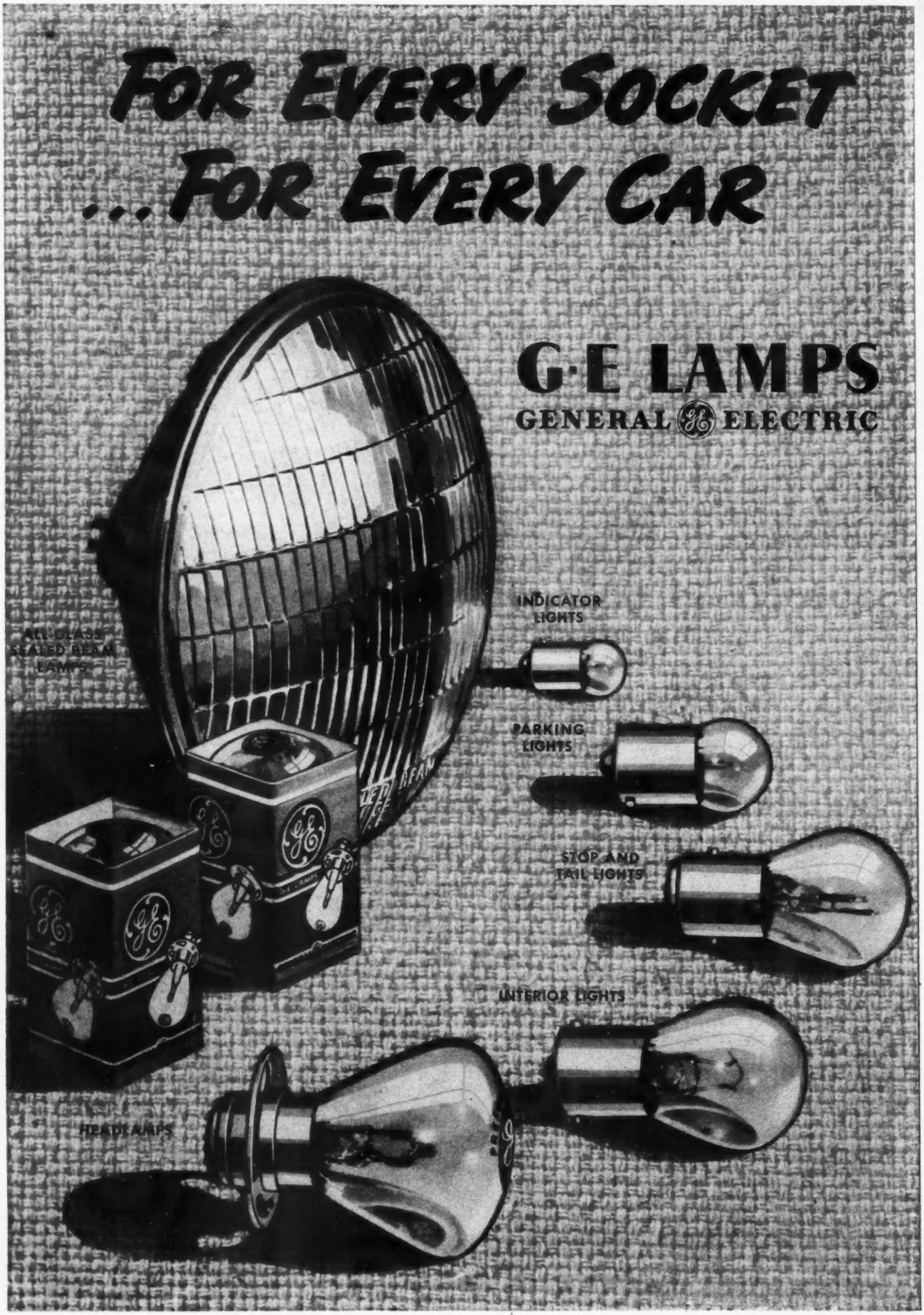
WAR ASSETS ADMINISTRATION

GOVERNMENT WAA SURPLUS

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cincinnati Cleveland • Dallas • Denver • Detroit • Fort Worth • Helena • Houston • Jacksonville Kansas City, Mo. • Little Rock • Los Angeles • Louisville • Minneapolis • Nashville New Orleans • New York • Omaha • Philadelphia • Portland, Ore. • Richmond St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane • Tulsa

704-7

FOR EVERY SOCKET ...FOR EVERY CAR



THERMO KING
IS OUT IN FRONT!



WEIGHS UNDER 800 POUNDS
Thermo King's years of experience bring you a power-packed, light-weight unit at no sacrifice of capacity. That's why Thermo King is out in front!

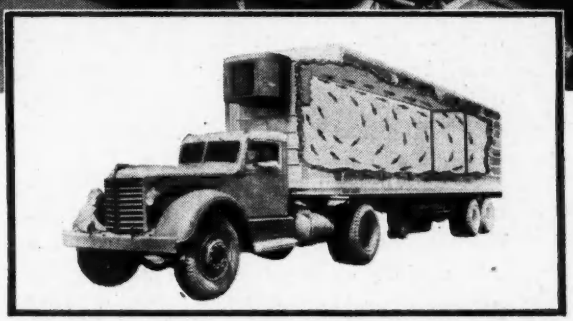
AUTOMATIC TEMPERATURE CONTROL
Just set the thermostat and snap the switch. Thermo King maintains any desired temperature for any length of time . . . on the road or at the loading dock. That's why Thermo King is out in front!

HEATING . . . AT THE SNAP OF A SWITCH
Thermo King Model 30 gives you year 'round service. No valves to turn . . . just snap a switch and keep your cargo safe even in sub-zero weather. That's why Thermo King is out in front!

COMPLETE, COMPACT PACKAGE
No long refrigerant lines . . . no connection to the tractor. Occupies less than 8 cubic feet inside upper front of trailer. Unit is out of road dust and dirt. That's why Thermo King is out in front!

U. S. THERMO CONTROL CO.
44 SOUTH 12th ST., MINNEAPOLIS 4, MINN.

LARGEST BUILDERS OF MECHANICAL TRUCK REFRIGERATION



Installation is a simple matter of inserting the unit into an opening prepared in the trailer. Forced circulation insures complete protection of any perishable cargo . . . meat, frozen foods, dairy products and others.

MAIL THIS COUPON—NOW!

U. S. THERMO CONTROL CO.
44 South 12th St., Minneapolis 4, Minn. D-I-B

Please send complete information about Thermo King mechanical refrigeration for trucks and trailers.

To Attention of.....

Firm Name.....

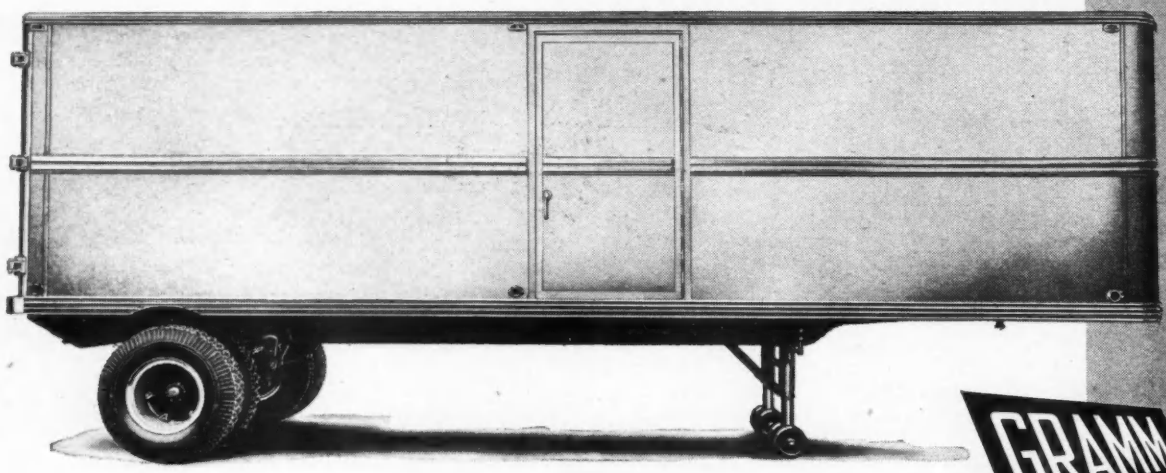
Address.....

City.....Zone....State.....

LIGHTER STURDIER

PAYLINER

ALUMINUM VAN



GRAMM TRAILERS

Unique in design and construction, the Gramm aluminum ***PAYLINER*** van offers peak advantages of light weight all aluminum body combined with the famous, rugged Gramm frame . . . plus modern streamlined appearance. Low center of gravity and lightness of weight assure easier pulling, better control, safe and economical operation.

Enthusiastic owners endorse the ***PAYLINER*** as a real answer to more profitable operation. The outstanding success of hundreds of these units in daily use offers real proof of sound engineering and long, faithful service. Add this superior van to your fleet now! You'll be proud of its smart, modern lines . . . still more pleased with its easy handling, high efficiency, dependability and economy.



You are invited to get *all* the facts about the outstanding ***PAYLINER.*** Write today for literature and complete information.

GRAMM
A NAME FAMOUS FOR HIGHEST QUALITY IN TRANSPORT EQUIPMENT

GRAMM TRAILER CORPORATION
Delphos, Ohio

SOLD BY LEADING INDEPENDENT DISTRIBUTORS AND DEALERS



TESTING FILES
Files are tested by being struck on a metal plate. Their perfection is demonstrated by the way they "ring true."

"RING-TRUE"

IN AUTOMOTIVE PRODUCTS, TOO, "RING-TRUE" MEANS THE FINEST

Many a *new* automotive product has recently joined the "Ring-True" line of Clawson & Bals. Get to know them all: Engine Bearings . . . Reconditioned and Rebabbitted Connecting Rods . . . *Bohnalite* Pistons and Pins . . . Hydraulic Brake Parts . . . Hydraulic Brake Hose . . . Whip Ends . . . Water Pumps . . . Water Pump Repair Kits . . . Spring Shackles . . . and Flexible Hose Assemblies for gas, oil, grease and vacuum lines. If it's "Ring-True," it's the *finest!* Clawson & Bals, Inc., 2508 S. Michigan Ave., Chicago 16.



Genuine
RING-TRUE PRODUCTS

CLAWSON & BALS, INC.

Really Complete Engine Bearing and Connecting Rod Service . . . Branches in Principal Cities


Here They Are—
INLAND
FUSE PATCHES
No. 654
For Vulcanized Repairs to Natural and Synthetic Rubber Inner Tubes
INLAND RUBBER CORPORATION
20 LARGE OBLONG
INLAND
FUSE PATCHES
No. 655
For Vulcanized Repairs to Natural and Synthetic Rubber Inner Tubes
INLAND RUBBER CORPORATION
50 SMALL OBLONG
INLAND
FUSE PATCHES
No. 653
For Vulcanized Repairs to Natural and Synthetic Rubber Inner Tubes
NEW
INLAND
FUSE PATCHES



. . . for Repairs You Know are Safe on Both Natural and Synthetic Rubber Tubes!

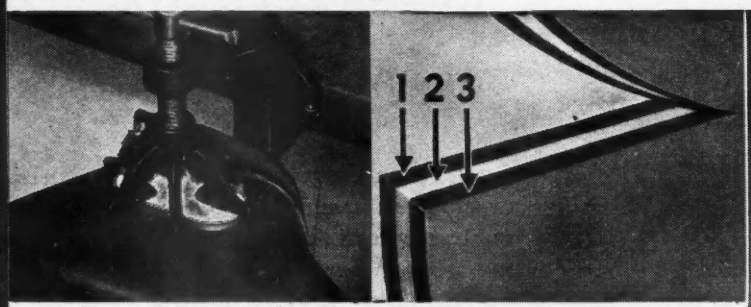


100% Natural Rubber

. . . *No reclaim, synthetic or "doped" stock!* The rubber in Inland Fuse Patches has plenty of natural stretch—will "give" with the tube! No puckering . . . or uneven pull on the tube structure. Stays fresh longer.

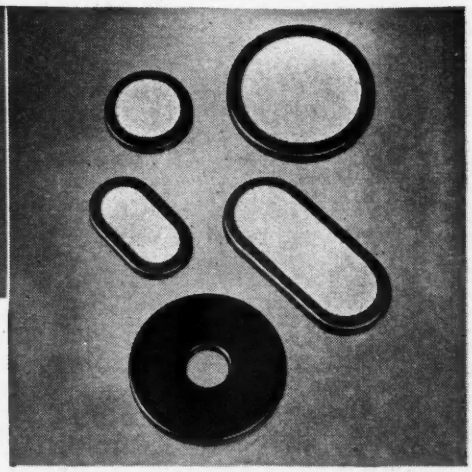
You asked for a hot-type patch that would take the guesswork out of vulcanized tube repairs! It's here now—a 100% natural rubber patch that gives you a better, safer, smoother repair—on natural and synthetic rubber tubes.

Stock up today with this new complete line of Inland Fuse Patches—backed by the same assurance of quality and outstanding performance that more than 20,000 service station operators and tire and tube repair men have grown to expect from their experience and profits with the complete line of Inland Tire and Tube Repair Products.



Prolonged, Even Vulcanizing Heat

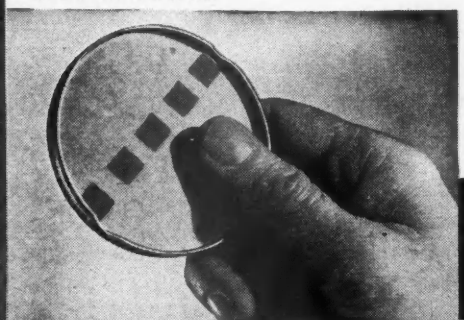
. . . *insures complete cure!* Heating cartridge in Inland Fuse Patches maintains correct vulcanizing temperature of more than 280° for better than 6¼ minutes on the average. No spotty afterglow to cause scorched and blistered areas.



3 Plies of Laminated Rubber

. . . *insure maximum strength and air-tight repairs.* Make the scissors test yourself. Cut the rubber of an Inland Fuse Patch in two. Notice how the 3 separate plies of live rubber are bonded together to insure a strong, air-tight seal for all tube injuries.

2 Shapes and 4 Sizes . . . . . *for large and small injuries . . . for round holes and long tears . . . for valve stem replacements.* Each Inland Fuse Patch is individually sealed in moisture-proof cellophane containers, in water repellent fiber cans . . . always dry and ready to use.



They're Easy to Ignite

. . . *and fit any clamp.* Just apply match flame to green fuses on cartridge. These accelerating areas flash combustion almost instantaneously . . . creating immediate, intense heat over the entire area of repair.

Copyright 1947 by I.R.C.

YOUR AUTOMOTIVE JOBBER HAS THEM IN STOCK...NOW! Contact him . . . or ask his salesman for full information. Or drop this coupon in the mail today.

Inland Rubber Corporation
Dept C53
33 South Clark Street, Chicago 3, Illinois

I'm interested in the new *Inland* Fuse Patches. Please have a salesman call with full information.

Name.....

Address.....

Town..... *State*.....

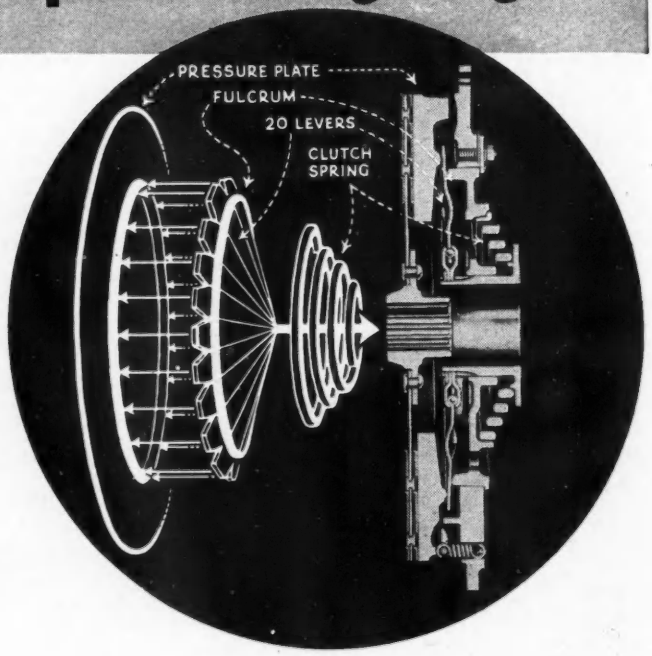
More hours on the road; *Fewer* lay-ups in the garage

with

LIPE

MULTI-LEVER, HEAVY-DUTY

Clutch



● The Lipe multi-lever Clutch eliminates grab and shock-loading. Banishes cocked plates and burned spots on the friction facing. Gives more engagements between tear-downs. Imposes less strain on the engine, transmission, drive-line, differential and axle. Reduces scuffing of rubber.

★ ★ Standard equipment on the products of the outstanding heavy-duty truck makers before the war, and on the great majority of heavy-duty army trucks and prime movers during the war.

● The reason is simple. There's only one spring. The pressure is distributed evenly all around the pressure plate by 20 pressure-equalizing levers. That means every part of the pressure plate touches at the SAME INSTANT . . . with the SAME PRESSURE. There is no cocking of the plate, no high spots, no points of high slippage and localized burning. The clutch engages smoothly without babying. Holds without slippage in final engagement.

Lipe multi-lever Clutches employ push-type release, with the throw-out bearing operating only while the clutch is released. Wear-adjustment is possible without tear-down or special tools; just an easy removal of shims. Write today for a free copy of the LIPE SERVICE MANUAL, giving complete details on this basically better clutch.

LIPE ROLLWAY

Lipe- **ROLLWAY CORPORATION**
SYRACUSE 1, N. Y.

AC'S ASSURE UTMOST RELIABILITY





W-I-D-E-R HEAT RANGE FOR EACH PLUG

definitely assures you Better Performance

No matter how well pleased you have been with other spark plugs, you will find today's *AC Spark Plugs for commercial vehicles* more satisfactory.

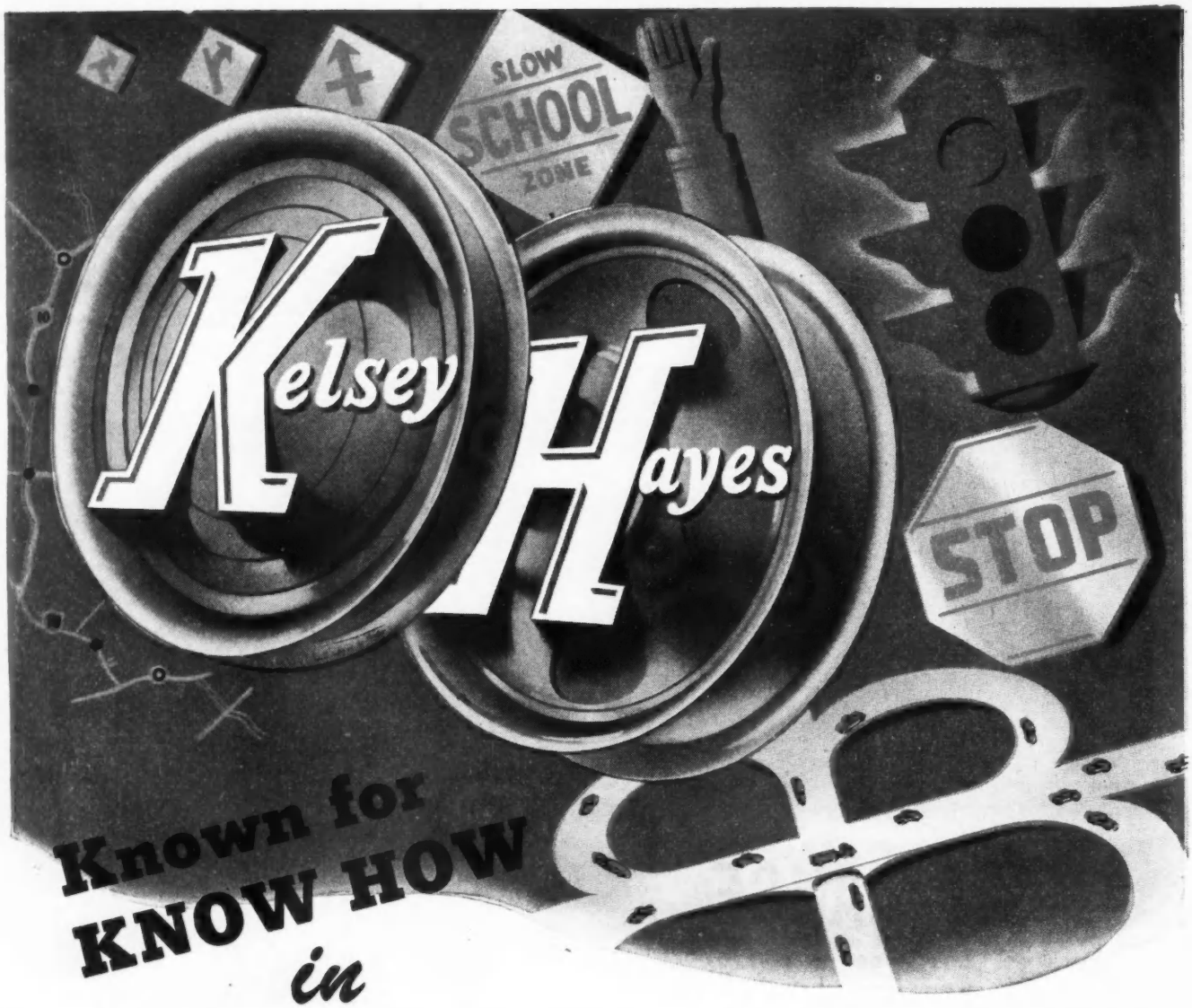
They stay clean longer. They accommodate a wider variation in engine temperatures and operating conditions. They hold their gaps longer. They give you more of the engine power that fuel and power plant can generate. They require less frequent service and replacement.

If you aren't using these AC's now, give them a trial. This wider Heat Range per plug is one of AC's most important engineering accomplishments. It is worth thorough investigation.

AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION

★ ★ ★

SPARK PLUGS



Known for KNOW HOW *in*

RESEARCH, PRODUCT DEVELOPMENT AND VARIETY

*Another K H Proven Product—*VACDRAULIC

reflects **Kelsey-Hayes** "know-how" in every phase of its construction and engineering. A superior brake power booster, it is another product of the firm which leads its field in *research, product development* and *variety.*

. . . **VACDRAULIC** alone gives you that proper "brake-feel" and perfect feather-touch control—as it multiplies the power of a hydraulic braking system. Because all moving parts are sealed in a rugged, weather-tight housing, **VACDRAULIC** is protected from dirt, grease and water; and can be installed at *any* point along the hydraulic line. The unit operates efficiently at highest or lowest temperatures; and once installed, it requires no lubrication or valve adjustments.

VACDRAULIC'S superior construction and effortless operation are making it a favorite with drivers and fleet owners everywhere.



VACDRAULIC:
Puts brakes on faster, stronger, with perfect feather-touch control.

Inquiries from Automotive Distributors and Manufacturers being accepted at **Kelsey-Hayes** Wheel Company

KELSEY-HAYES WHEEL CO. *K now H ow* **DETROIT 32, MICHIGAN**



Announcing

Highway Tank Trailers

HIGHWAY WAREHOUSEMAN'S VAN

The new Highway Warehouseman's Van has extra cubage, all latest convenience features, dust-tight and moisture-proof construction. Let it help boost your earnings and cut your costs this year!

You can now get Highway Tank Trailers! They have been added to the Highway line of modern truck trailers in answer to an ever increasing demand. The new Highway Tank Trailer line will embrace all of the most commonly used types. Shown above is the frameless, 4500-gallon, six-compartment model, designed for service station delivery or bulk transportation.

Note the fine appearance of this tank's streamlined construction. It is engineered to provide maximum load. Weight is distributed to conform with road laws. Other models include single and multiple compartment tanks of varying capacities, and a giant tandem axle tank trailer that holds 5500 gallons.

Write for complete information or see your nearest Highway Trailer Branch or distributor. Highway Tank Trailers measure up in every respect to the high standards of quality which have made Highway Trailers a familiar sight "on every U. S. Highway." It will pay you to let your next tank trailers be Highways.

HIGHWAY TRAILER COMPANY

General Offices: Edgerton, Wisconsin

Factories at: Edgerton, Wis. • Stoughton, Wis. • Farmingdale, L. I., N.Y.

Commercial Truck Trailers • Earth Boring Machines
Winches and other Public Utility Equipment

On Every U.S. 5 *Highway*

HIGHWAY *AMERICA'S QUALITY* TRAILERS

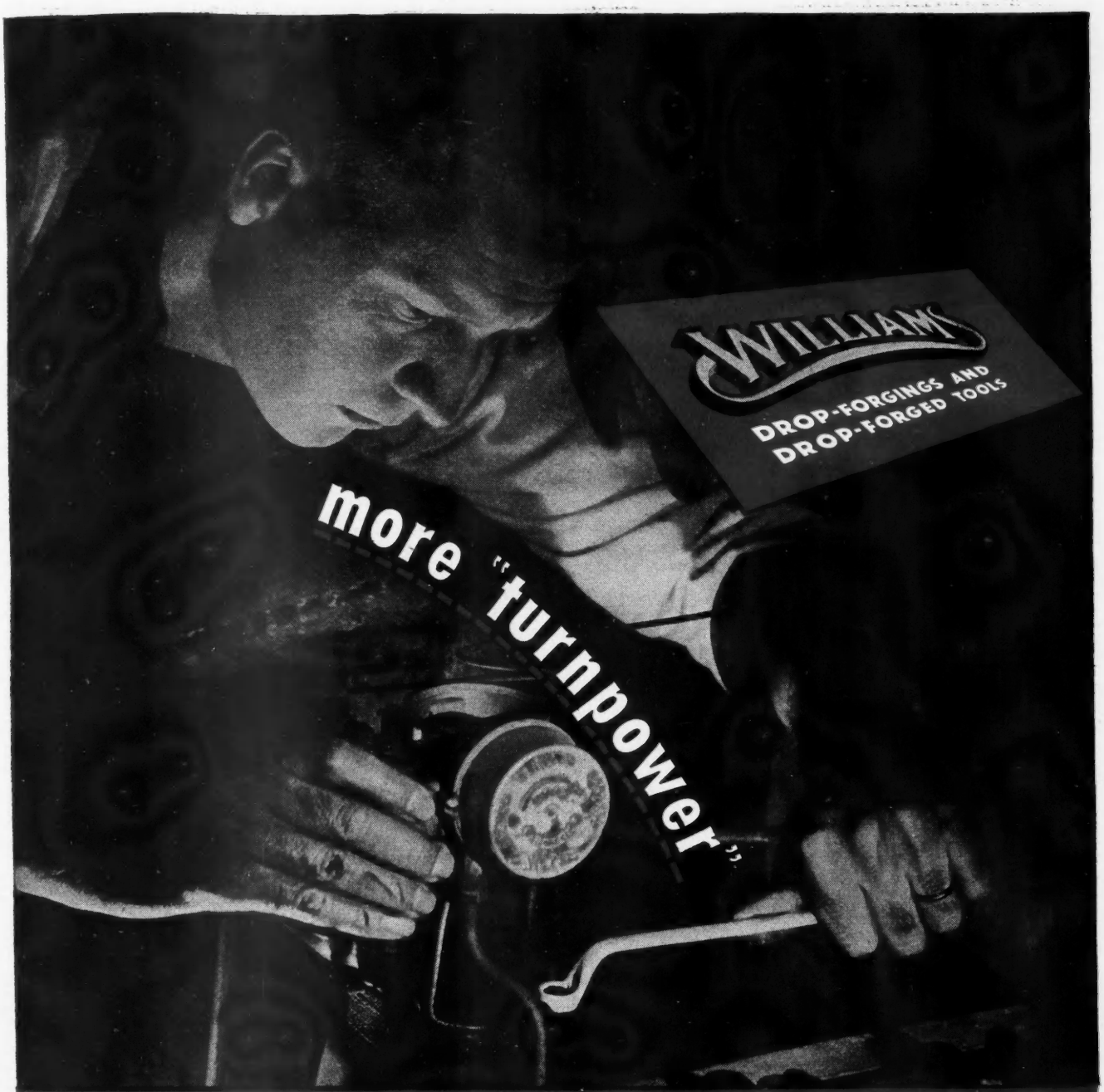


"Git thar fustest with the mostest," said the General . . . and General Forrest's Civil War maxim applies with just as much force in today's heavy-duty trucking business. It's the truck owner who can operate on the fastest schedule . . . with the heaviest payloads . . . who gets the biggest share of the profits.

Fuller Heavy-duty Transmissions and Auxiliaries are built specifically for high speeds and heavy loads. You're sure to get the proper gear ratios for your rig . . . plus the extra advantages of quieter-running, longer-lasting, easier-shifting units . . . when you specify Fuller Transmissions.

FULLER MANUFACTURING COMPANY, TRANSMISSION DIVISION
KALAMAZOO 13F, MICHIGAN
Unit Drop Forge Division, Milwaukee 1, Wisconsin

Fuller TRANSMISSIONS





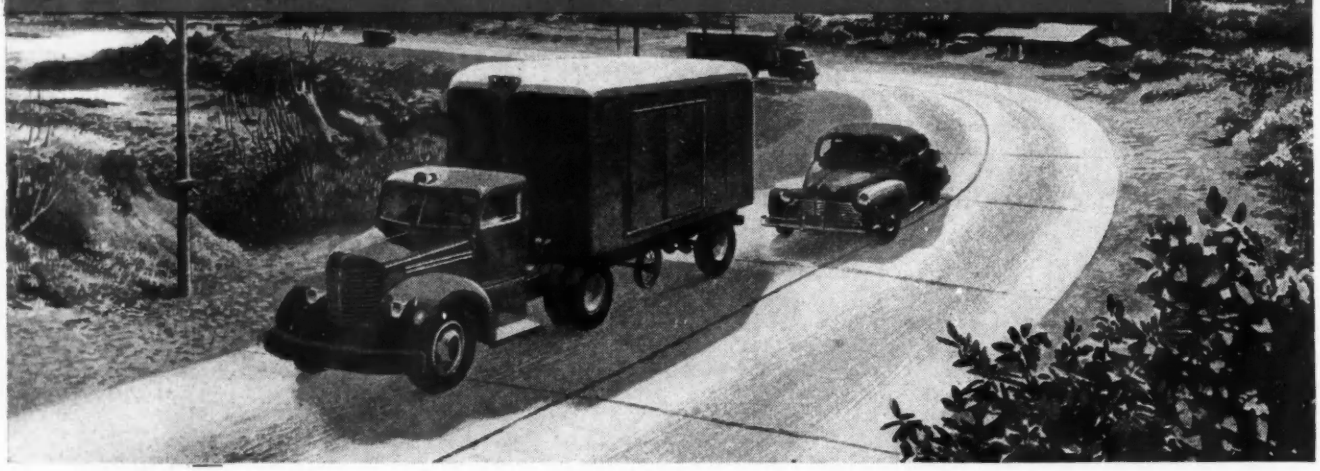
Complete rotation of hex nuts is possible with these Williams Box "Superrenches" where the handle swing is limited to as little as 30° . . . less than one-tenth of a turn.

Offset handles clear obstructions that otherwise would bark knuckles. Their 12-point openings grip hex nuts on six sides . . . preventing slippage and rounding of the nut's corners.

Thin head walls permit fast and safe operation where clearances are limited. There is a full range of sizes and a variety of patterns to meet every need. Sold by automotive and aircraft distributors everywhere.

J. H. WILLIAMS & CO., Buffalo 7, New York

"GUINEA PIG" fleets cut profits!



You are the one who "takes it on the chin" by experimenting with heavy duty oils. Somebody makes a profit when you buy the wrong oil, but fleet owners can take a loss, and a stiff one.

On the other hand, it's good business for Wolf's Head to experiment because that's how we developed "the finest of the fine." World-famous laboratories made many tests—over and over again—so that Wolf's Head could give fleet owners the one heavy duty oil that was consistently proven superior . . . the oil with the highest rating on *all five* heavy duty factors.

Send for the free booklet describing these tests of heavy duty oils. See for yourself the proof of Wolf's Head superiority . . . how Wolf's Head can lower maintenance costs, conserve engine life, cut down-time, improve performance. Wolf's Head Oil Refining Co., Inc., Oil City, Pa., New York 10, N. Y.

LABORATORY TEST PROVES WOLF'S HEAD IS BEST



◀ GM Diesel Piston after 500-hr. "endurance" test. Heavy varnish on piston skirt. Excessive bearing corrosion—weight loss 1450 Milligrams. Rating: "Very Poor". Oil used: Nationally advertised competitive heavy duty oil.



GM Diesel Piston after 500-hr. "endurance" test. Only slight trace of varnish. Rings entirely free. Bearing weight loss only 27 Milligrams. Rating: "Excellent". Oil used: Wolf's Head Heavy Duty Oil. ▶

LABORATORY CONTROL SERVICE *gives fleet operators specific recommendations for their units, based on analysis of crankcase oil. Helps to establish correct drain periods, conserve engine life, reduce lay-ups . . . frequently reveals unsuspected engine troubles. Free and without obligation.*

WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pure Pennsylvania P.G.C.O.A. Permit No. 6



80 PASSENGER
BOEING STRATOCRUISER
to be used on
NORTHWEST AIRLINES
COAST TO COAST *and*
ORIENT ROUTES

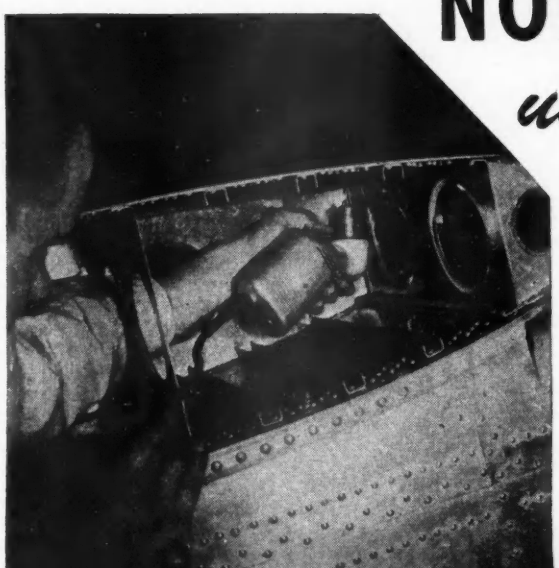
PHOTOS
COURTESY
NORTHWEST
AIRLINES

COAST-TO-COAST···ALASKA···the ORIENT

NORTHWEST AIRLINES

uses

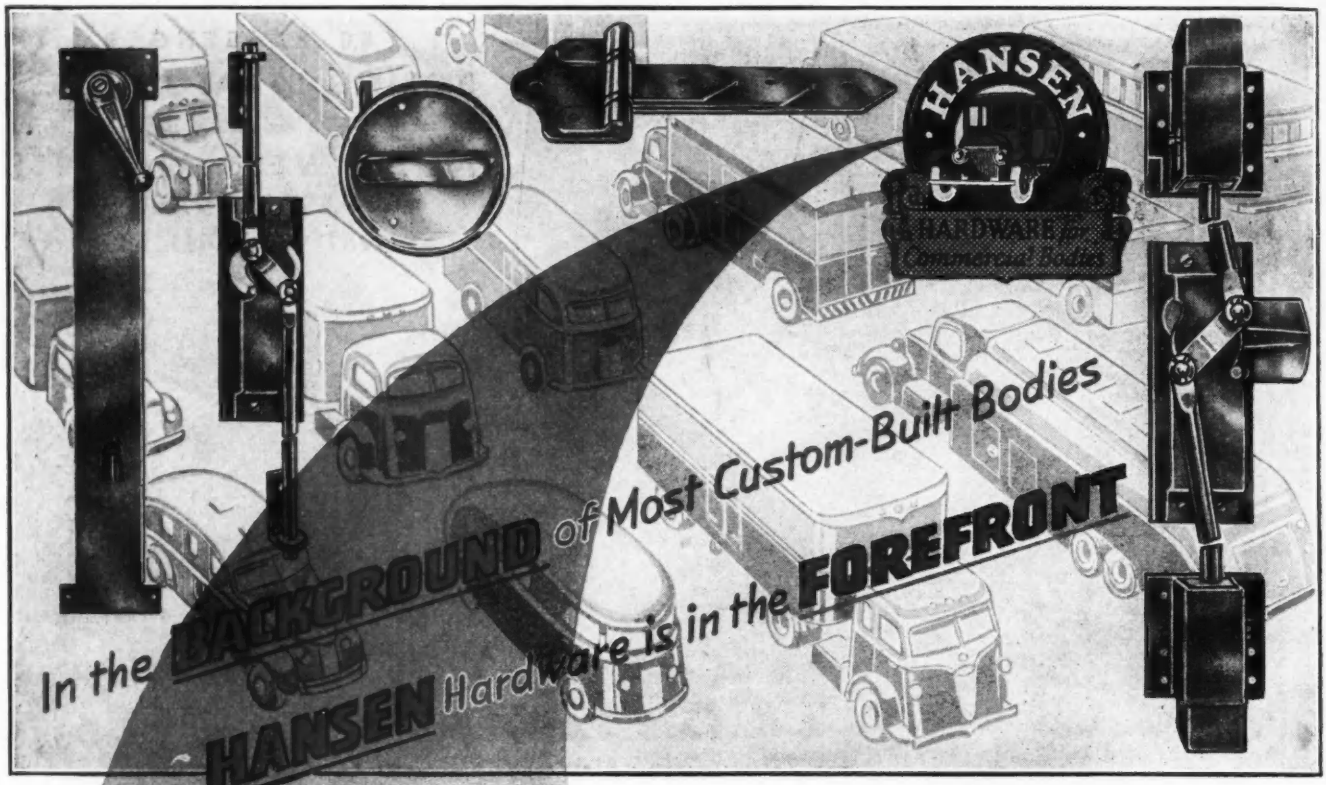
Sioux TOOLS



Sold only through AUTHORIZED Sioux distributors

STANDARD THE WORLD OVER

ALBERTSON & CO., INC. SIOUX CITY, IOWA, U. S. A.



WHY HANSEN BACKGROUND PUTS IT IN THE QUALITY FOREFRONT

1. **SIMPLE DESIGN** is embodied in all Hansen Body Hardware. This simplicity reduces the number of parts. With fewer parts there is less wear, longer service, lower maintenance costs. For instance, the Hansen Extension Lock is made in one piece, with no loose parts to require adjusting or fitting.
2. **ECONOMICAL APPLICATION.** Hansen Hardware is easy to apply. As an example, many Hansen Locks fit flat on the door and require no mortising or blocking. This saves time, labor and money. Locks are attached to door with a few screws or bolts, leaving door solid and strong. Many Hansen products are interchangeable, reducing cost of application.
3. **EASY OPERATION.** Large, easy-gripping handles on locks provide extra leverage for easier opening of doors; regulators with straight-lift, counter-balanced mechanism; bolts of special design on slamming and slam-and-take-up locks—are a few of many reasons why Hansen-equipped doors open and close more easily.
4. **DEPENDABLE PERFORMANCE.** The built-in stamina, ruggedness and quality—extremely simple design—factory inspection and the test of service—all combine to make Hansen Hardware last indefinitely. Patented die-formed bushings that keep handles rattle-proof; wide striker bolts that hold doors solidly—extra strength and durability—explain why Hansen *lasts longer.*

★ ★ ★

Not what we say, but what users say—that's what counts most! Read what these users—a few of many—have to say about Hansen Hardware:

★ ★ ★

***A WESTERN BODY BUILDER:** "Our factory makes aluminum truck bodies and motor coaches exclusively. These units operate daily under the most severe conditions from the deserts of California and Utah to the frozen extremes of the Northwest. No failures of any kind have been occasioned in the Hansen Hardware used on these jobs. We unhesitantly recommend Hansen where quality material is important."*

★ ★ ★

***AN EASTERN BODY BUILDER:** "For the past fifteen years we have incorporated Hansen Hardware in the designing of our motor truck bodies, and can say, without fear of contradiction, that this particular hardware is ideally adapted to the demands of modern day requirements. Like the bodies we build, it is constructed with an eye toward durability and appearance, and we say, 'When better hardware is built, Hansen will build it and we will use it.'"*

★ ★ ★

A. L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE., CHICAGO 40, ILL.



5 for 4

A New Addition to GENERAL'S Line of CO2-SnoFog Carbon Dioxide Extinguishers

GENERAL'S new 5-lb. CO2-SnoFog carbon dioxide extinguisher costs no more than the 4-lb. size—yet gives you 25% more fire protection. This makes GENERAL CO2-SnoFog the best buy in the fire extinguisher market—best for protection; best for economy.

The new 5-lb. GENERAL CO2-SnoFog fits the standard 4-lb. wall bracket. Improved design of the shell makes it unusually light and easy to handle, with no sacrifice of structural strength.

IF IT'S GENERAL IT'S DEPENDABLE



New 2½-lb. Size, Also!

Another new CO2-SnoFog—2½-lb. size—gives 25% more fire protection than the 2-lb. size, yet costs the same. It is light, strong, and easy to handle, due to improved shell design—an outstanding value. See the yellow section of your local telephone directory for your nearest GENERAL dealer. Ask him to show you both these new CO2-SnoFog extinguishers, or write for complete details.

Service For You . . .

Through GENERAL'S Distribution System

To assure you immediate service, GENERAL maintains a nation-wide network of 20 branch offices and warehouses. There is one near you. Call your local GENERAL representative for advice and counsel on all your fire protection needs, or write direct.

THE GENERAL DETROIT CORP.

Manufacturers of Fire Extinguishers
Motor Fire Apparatus and Allied Equipment
2270 E. JEFFERSON • DETROIT 7, MICHIGAN
NEW YORK • PHILADELPHIA • ATLANTA • CHICAGO • DALLAS
West Coast Subsidiary: The General Pacific Corp.
Los Angeles San Francisco Denver Seattle
Distributors in Principal Cities

1-2-3 AND GILLETTE BEATS THE HEAT!





1 EXCLUSIVE SHOULDER DESIGN

Excess heat-generating rubber is eliminated. Husky deep cut shoulder-studs allow cooling air to circulate freely and cool off the "hot spots"



2 POWERWAVE TREAD

"Powerwave" design fights off costly groove cracking. Husky center running-rib puts strength where it is needed for long tire life. 100% natural rubber tread helps keep temperatures down, mileage up.



3 HI-TENSILED RAYON

Generates less heat under heavy loads. Gives the tire the inner strength for grueling service, keeps it strong for more recaps.

Wherever heat strikes, it meets its master with Gillette Truck Tires. These cool running tires have what it takes to withstand the most rugged service. For long economical operation, year after year . . . ride with Gillette. They're a "Bear for Wear."

A BEAR FOR WEAR

GILLETTE

TRUCK TIRES

Gillette Tires • Division of United States Rubber Company • 1230 Avenue of the Americas • New York 20, N.Y.



HERE'S UTMOST RELIABILITY IN SPEEDOMETER CABLES, TOO

No matter what makes of buses or trucks you operate, there are AC-engineered and AC-built Speedometer Cables for replacement service, either in complete cables ready for use, or in special kits with necessary parts and tools.

Twenty years of "know-how"—twenty years of experience in meeting the factory equipment requirements of automotive engineers—have given AC Speedometer Cables the *utmost reliability.* That's why more and more fleet owners insist upon AC Cables for all replacements.

Standardize on AC, the equipment that gives you *utmost reliability.*

AC CABLES
assure THIS kind of QUALITY

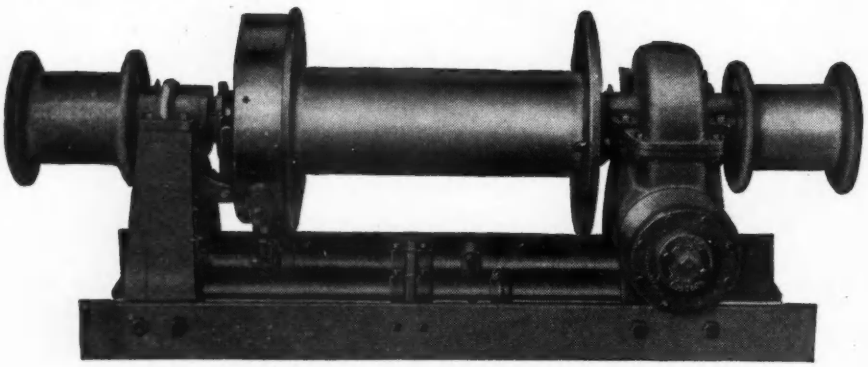
- Flexible cables made of highest grade steel wires on special, patented winding machines.
- Flexible cables heat treated by patented methods to assure highest possible quality, which means:
  - Low whip
  - Low internal friction
  - Low torsional flexibility
  - High torque strength
- Built to meet the exacting requirements of car and truck makers.

AC SPEEDOMETER CABLES

AC SPARK PLUG DIVISION, GENERAL MOTORS CORPORATION

Truck Contractor Reports

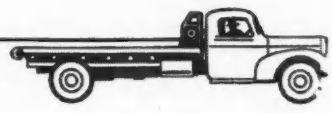




Tulsa Winches are conservatively rated with ample margin for safety

Actually, helpers are no longer needed with a Tulsa WINCH on the job. In addition, a Tulsa Winch saves money by its long years' performance. Put the helpers to work elsewhere . . . use a Tulsa Winch on all your lifting and loading jobs. You'll save money, time and man-power. Tulsa Winches available from distributors in leading cities, or write direct for complete information.

Tulsa Winch
TULSA, OKLAHOMA
DIVISION OF VICKERS Inc.





SURE.. We have an ACE up our sleeve..

—when we say "Your books tell our sales story!"

Just once—let your books show lower tire costs for trucks with Dayton Thorobreds! Let it happen once, and we won't need any high-powered salesmen in your office.

We've learned how often you look at your books to "See what rubber costs." We build tires to show up best at times like that—with an ace up our sleeve.

We know also about road delays caused by tires, and what you think of that.

So, our request is simple—put us on trial! Give one of your typically tough jobs to Thorobreds by Dayton . . . watch them, fairly and closely . . . and judge our product by your own books.

That's one of the best sales appeal we know. We've seen it work—thanks to that ace.



TRY the Bookkeeping Test on

THOROBREDS by Dayton

THE DAYTON RUBBER MANUFACTURING COMPANY, DAYTON 1, OHIO

THE MIGHTY
WARD LA FRANCE

Here is the dynamic heavy-duty truck of the year. Never before has there been such a powerful truck with all the features and economies of the mighty Ward LaFrance.

These big, rugged over-the-road tractors are engineered by Ward LaFrance, manufacturer of the Army's giant M1 tank reconnaissance wrecker and the famous Ward LaFrance fire truck . . . . double assurance of extra power and stamina.

Look for the big truck with the exclusive "flat top" fender



WARD LAFRANCE TRUCK DIVISION
Great American Industries, Inc.
ELMIRA, NEW YORK

Builders of Famous Ward LaFrance Fire Trucks



for over Twenty-five Years



EXCLUSIVE *Features*

- Applies and removes every known make and type of passenger car and truck-bus balance weight whether wheel is on or off the vehicle spindle.
- Scientifically designed to positively eliminate damage and fracture to clips during application or removal.
- Capable of removing weights with smooth clips or clips with a removing hole feature.
- Cantilever action that assures a positive grip which becomes greater and firmer as pressure is applied.
- Will not slip and cause welts and blisters on the balancing machine operator's hands.
- Increases profits by promoting continued reuse of weights.

. . . THE ONLY TOOL

For Applying and Removing Every Make and Type of Wheel Balance Weight

The Gimmick, sensational new L & H Universal Weight Application and Removal Tool fills a long-felt need. Scientifically designed for use with all known makes and types of passenger car and truck-bus balance weights, its development is the result of years of experience in the wheel balance weights and equipment field, and an especially close relationship with the automotive industry tire, wheel, rim and balancing equipment manufacturers. It's a MUST for automotive service men.

This new tool simplifies wheel balancing operations . . . saves time. Opens the way for increased profits by promoting reuse of weights.

Order Gimmicks (Part No. HCL 600) from your wholesale automotive distributor today. List Price—$3.25.

L&H

HARLEY C. LONEY CO.

BALANCE L&H WEIGHTS

Detroit 21, Michigan



LOW-COST PROTECTION

for high-cost parts!

Why pay a premium for insurance against costly front-end damage?

You don't have to. When you install a famous Champion Grille-Guard on your truck, you get positive *low-cost* protection for high-cost parts.

Closely spaced, all-welded bars give *full-width* protection to your truck's fenders, headlights, radiator grille, radiator and other front-end parts which are costly to repair or replace. Yet the cost of a Champion Grille-Guard is even *less* than many ordinary guards.

No matter where your trucks must go—in congested traffic, at loading docks, or *wherever* there is danger of front-end damage—you can depend on the super-strength of Champion Grille-Guards for sure protection.

Eliminate the danger of costly front-end damage. See your truck dealer or Truckstell distributor today. Or write The Truckstell Company, Union Commerce Building, Cleveland 14, Ohio.

6 Reasons Why Truck Owners Say Champion Grille-Guard Is the Best Buy:

1. Protects *entire* front end
2. Extra strong, closely spaced bars
3. All-welded construction
4. Attractive enamel finish
5. Easily installed
6. Top quality at low price

ONLY $22.50—FOR ½ AND ¾ TON MODELS—ONLY $25.00 FOR HEAVIER MODELS

F.O.B. Detroit, Mich.—Tax and installation extra—Special Discounts for Fleet Owners.



CHAMPION

Grille-Guards

Approved AND DISTRIBUTED BY TRUCKSTELL

SPECIALIZED EQUIPMENT FOR PLUS PERFORMANCE

MANUFACTURED BY TURNER EQUIPMENT COMPANY, DETROIT, MICHIGAN









"WE MADE A DIFFICULT LETTERING JOB EASY...

because we used the Quixign Stencil Method," says Jim Cattel, Nicolay-Dancey's paint shop foreman. "This semi-trailer displays sixteen New Era trade marks in three colors. A job like this would be most difficult to accomplish in hand lettering, from the standpoint of perfection and economy. That is why I think the Quixign Lettering Method is ideal."

Here's a tried and proved "better way" to letter your equipment economically. It offers the advantage of speed—eliminates long truck tie-ups and insures permanent, beautiful spray lettering. Thousands of fleet owners are swinging to the Quixign Method.

We can furnish you with adhesive coated ready-to-apply stencils duplicating any design or style of letters desired. Stencils may be ordered in any quantity. They will retain proper adhesion indefinitely when stored away.

Do your truck lettering the practical way. Use Quixign Method—Quixign Materials. We will gladly give you complete instructions for cutting your own stencils with Quixign Materials. Write us today.

AT YOUR SERVICE!

A new creative department offering transportation and fleet operators suggestions to help make fleet equipment more attractive.

1. **Pleasing color combinations**
2. **Original and modern lettering layouts**
3. **Streamline color designing**

For details write Creative Service Department c/o our company.

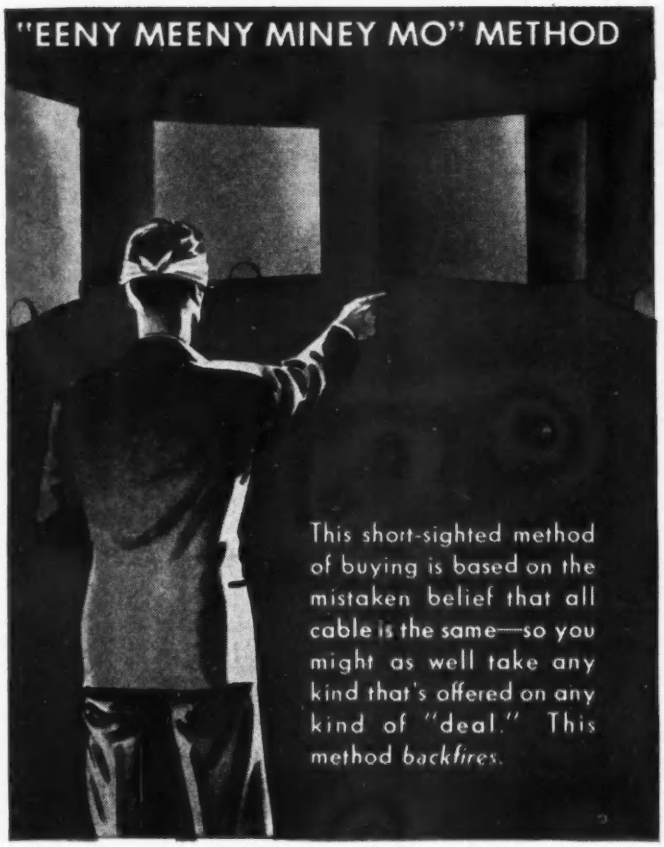
"This Service is Yours for the Asking"

Quixign Brilliant, Heavy-Bodied Synthetic Enamels and Fast Drying, Non-Brittle, High Gloss Lacquers Are Now Available in All Popular Colors.

ASHLEY QUIXIGN COMPANY

15330 IDAHO AVENUE, DETROIT 3, MICHIGAN

Which Buying Method is Yours?





Quality Buyers specify PACKARD CABLE

Quality buyers know it's not by mere chance that Packard cable is used as original equipment on more cars, trucks and buses than is any other make.

They know that Packard cable's longer life—its greater resistance to heat, cold, oil, moisture and corona—has been proved both on the ground and in the air.

Quality buyers know, too, that cable is Packard's *only* automotive line . . . and that in research, advanced materials and manufacturing methods, Packard cable has all the benefits of *specialization.*

In view of these facts, it's not surprising that quality buyers insist on Packard cable for all replacement purposes. They realize that the cable that's best for their customers is best for them, too!

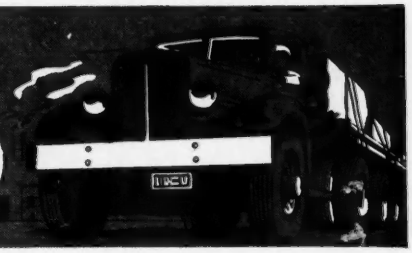
YOU'RE RIGHT WITH Packard

REG. U. S. PAT. OFF. TRADE MARK

PACKARD ELECTRIC DIVISION
GENERAL MOTORS CORPORATION
WARREN, OHIO

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

STANDARD ENGINEERS NOTEBOOK

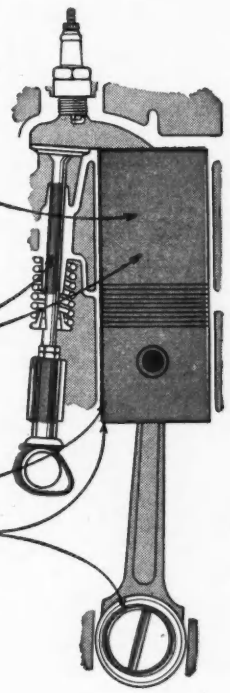


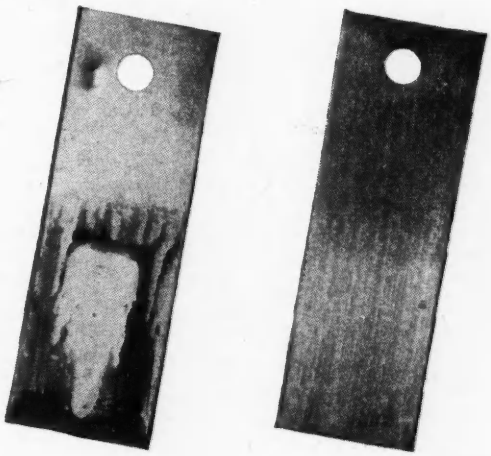
① Adhering agent in RPM Compounded Motor Oil keeps oil film on all parts after engine stops, even on cylinder walls.

② Rustproofing compounds prevent moisture that condenses on cooling parts from contacting metal.

③ No rust is formed to scrape off when engine starts, and cause excessive wear.

④ Constant lubricant film provides adequate and instant lubrication when engine starts.





This actual photograph shows how one HIGH-QUALITY MOTOR OIL "peeled" off almost all of this test strip of steel when it was placed in corrosive-moisture conditions similar to those in a cooling engine. The oil concentrated at one spot and the unprotected surface quickly rusted.

RPM COMPOUNDED MOTOR OIL kept this strip bright and shiny, completely sealed against rusting, when it was exposed to the same conditions. "RPM" compounds keep a constant rust-proofing lubricant film on engine parts at all times, whether they are idle or moving.

How RPM Motor Oil Rust-Proofs As It Lubricates

Rusting, caused by corrosive moisture, is the greatest source of wear in automotive engines (85%, according to some engineers). It can be controlled by using RPM Compounded Motor Oil.

Additional compounding for "RPM," perfected by Standard of California scientists, provides a rust-proofing lubricant film on internal engine surfaces. The heaviest moisture condensation in idle or cold-running engines will not cut through it.

Other compounds in RPM Motor Oil give it adherent qualities so the film stays on parts at all times. They also loosen and remove gum and lacquer, lubricate hot spots, resist sludge formation, bearing corrosion and stop foaming.

Trademark "RPM" Reg. U. S. Pat. Off.

For additional information and the name of your nearest Distributor, write Standard of California, 225 Bush Street, San Francisco 20, Calif.; The California Oil Company, 30 Rockefeller Plaza, New York 20, N. Y.; The California Company, 17th and Stout Streets, Denver 1, Colo.; Standard Oil Company of Texas, El Paso, Texas.

FOR EVERY NEED A STANDARD OF CALIFORNIA JOB-PROVED PRODUCT

Goodby BRAKE LAG—HERE'S POSITIVE CONTROL!

HYCON

Compound CYLINDER

Eliminates Vacuum "Boosters" on Trucks and Busses



Look for this registered trade mark

The single HYCON unit does hydraulically the combined jobs of fluid-vacuum-air brake systems; gives greatly improved braking control. With HYCON, *all* pressures are *hydraulic* pressures. In direct proportion to pedal pressures, they always deliver the exact amount of power to meet load or no-load conditions, whether motor is running or not. The secret of this *controlled braking* is in a *second piston*—hydraulic, *not* atmospheric—contained in the single HYCON *compound* cylinder.

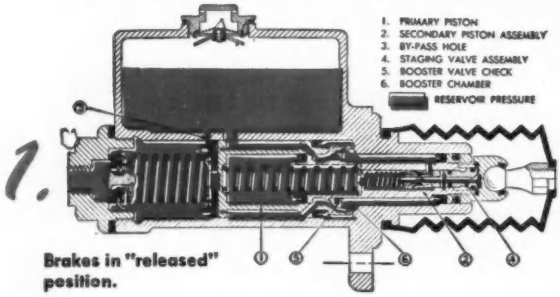
Simpler, Safer, More Economical

The greater *safety factor* in HYCON braking results from quicker stopping; better control. *Savings* begin with installation . . . first cost is less . . . reduced fuel consumption and tire wear . . . no air-vacuum parts to be serviced. The unit occupies no more space on the chassis than the original equipment cylinder; requires no additional tubing, and can be installed within an hour.

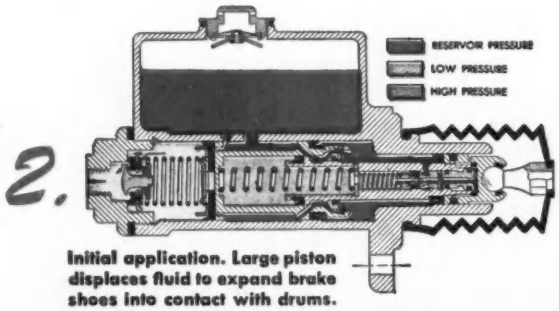
Send for Demonstrator Unit!

HYCON Truck Brakes are now built to replace 1¼" and 1½" Di. original equipment cylinders. Write for free descriptive booklet. *Order a demonstrator unit* from your local power brake distributor or truck dealer, or write direct to The New York Air Brake Company, 420 Lexington Avenue, New York 17, New York.

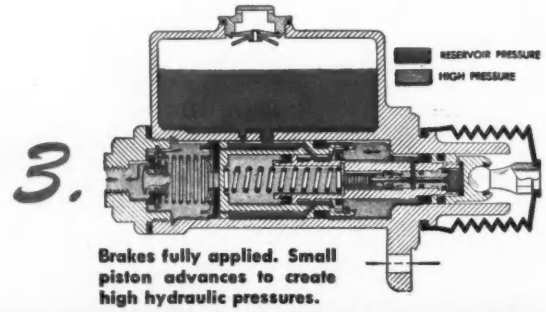
3 Steps in HYCON Operation:



Brakes in "released" position.



Initial application. Large piston displaces fluid to expand brake shoes into contact with drums.



Brakes fully applied. Small piston advances to create high hydraulic pressures.

THE NEW YORK AIR BRAKE COMPANY

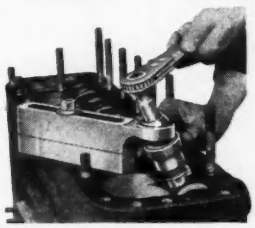
420 Lexington Avenue, New York 17, New York

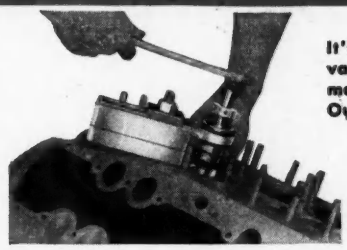
MAKE *every* VALVE SEAT INSERT JOB *profitable*

DO IT THE "KNOCK-OUT" WAY!



Inclined valves are no problem with a "Knock-Out" Reseater Tool.





It's easier to insert valve seats on V-8 motors with a "Knock-Out" Reseater Tool.

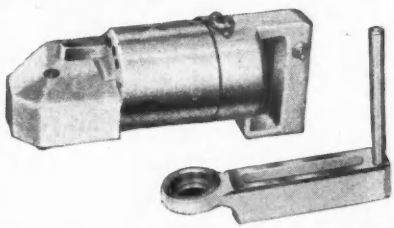


FAST—ACCURATE—POSITIVE

Valve seat insert jobs are more profitable when you use "Knock-Out" Reseater Tools.

Fast, easy to set up on any type motor—insert proper reseater cutter and pilot, set stop for depth, cut valve seat recess quickly, accurately.

There is a "Knock-Out" Reseater Set to fit your shop whether you specialize in one make of motor or repair every kind.



"Knock-Out" POWER DRIVE

The NEW "Knock-Out" Power Drive fits *any* K. O. Reseater Tool—does the job even faster, easier, better—adds still more profit to valve seat insert jobs. No hand pressure required. Just set this streamlined Power Drive on top the "K. O." Reseater Tool, snap on the switch and let it do the work. ASK YOUR JOBBER or mail the coupon.

if it's a **LEE** *it's a* "KNOCK-OUT"

K.O. LEE COMPANY
ABERDEEN, SOUTH DAKOTA

Fill in and mail today

K. O. LEE COMPANY
1103 First Ave. S. E., Aberdeen, S. D.
Please send us your illustrated catalogue on "Knock-Out" Reseater Tools.

NAME_____

ADDRESS_____

CITY_____ STATE_____



See why there is no substitute!

There's a **CONE** in the DeLuxe cartridge because it takes **DEPTH** to cleanse oil! The cone feeds the oil from the bottom through the entire depth of the cartridge to the top of it! That's not all! The space in the cone allows time for heavy particles to drop into the sump below, thus increasing the life of the cartridge.

Cotton cartridges tend to compress when oil is fed through them, thus impeding and sometimes entirely stopping the oil flow through the cartridge. To prevent this, DELUXE cartridges have a SPRING which guarantees the maintenance of the original cartridge size.

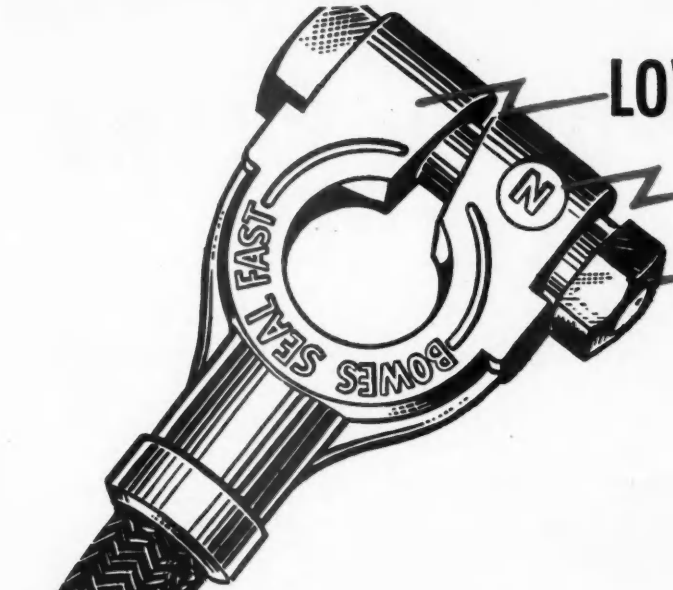
REMEMBER—ONLY DELUXE CARTRIDGES HAVE THE BUILT-IN CONE and SPRING and both are essential to FILTRATION that *ACTUALLY CLEANSES OIL!*

You'll find over ninety per cent of the new Dodge Trucks are equipped with DeLuxe Oil Filters! It's important that these filters be serviced with genuine DeLuxe refill cartridges. Why? Simply because the cartridge of a DeLuxe filter is different from that of any other make . . . its exclusive spring and cone construction are essential to proper operation! DELUXE CARTRIDGES ARE AVAILABLE THROUGH DELUXE JOBBERS FROM COAST TO COAST. DeLuxe Products Corp., 1406 Lake Street, LaPorte, Indiana. SEE YOUR DELUXE JOBBER TODAY!

DELUXE Oil Filter

DOES MORE THAN STRAIN OIL . . . MORE THAN FILTER OIL
ACTUALLY CLEANSES OIL

2198



LOWER MAINTENANCE COST
TROUBLE-FREE SERVICE
LONGER CABLE LIFE
WITH BOWES SEAL FAST

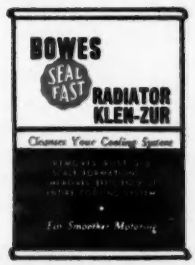
CORRODELESS BATTERY CABLES!

● It's at the *terminal* that most battery trouble occurs . . . sapping battery life, kicking up your maintenance costs. Bowes "Seal Fast" CORRODELESS Terminals are *unconditionally guaranteed* against corrosion—any Bowes "Seal Fast" Battery Cable will be replaced free if the terminal corrodes under sulphuric acid conditions. Here's the easy, inexpensive way to stop battery trouble *before* it starts. The Bowes "Seal Fast" distributor will gladly train your men in the proper adjustment of these better battery cables, and in the use of other Bowes "Seal Fast" products.

BOWES SEAL FAST

PREPARE YOUR RADIATORS FOR SPRING!

Bowes "Seal Fast" Radiator Klen-Zur flushes your engines quickly and thoroughly, removing winter's accumulation. Then follow this with Bowes "Seal Fast" Radiator Stop-Leak . . . and know that your radiators are in shape for top performance



BOWES "SEAL FAST" CORP., INDIANAPOLIS 7, INDIANA

MICO POWER BRAKE
HY-PAR CYLINDER

Replaces the master cylinder for greater safety on the hyways

Longer life for brake lining

positive Instant Manual pedal control

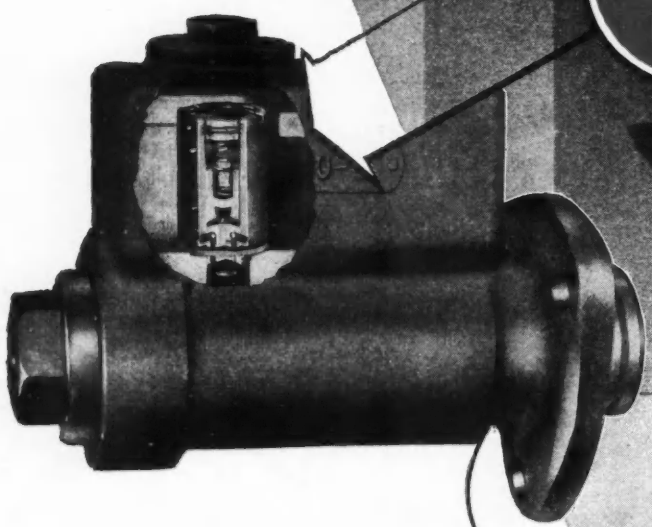
Simple Construction means minimum maintenance

More than doubles braking power

NO BOOSTERS . .

NO VACUUM

EXCLUSIVE! **This Relief Valve is exclusive to Mico Hy-Par! It allows the excess brake fluid to flow into the oil reservoir at any desired pressure and then to flow freely back into the cylinder when the brake pedal is released.**





Stop when you must . . .
no matter how big the load

The dependable, positive hydraulic power of *Mico Hy-Par* Power Brake Cylinder means smoother, surer stops no matter how big the load. *Mico* means increased safety regardless of temperatures or weather conditions and insures no overbraking on slippery roads.

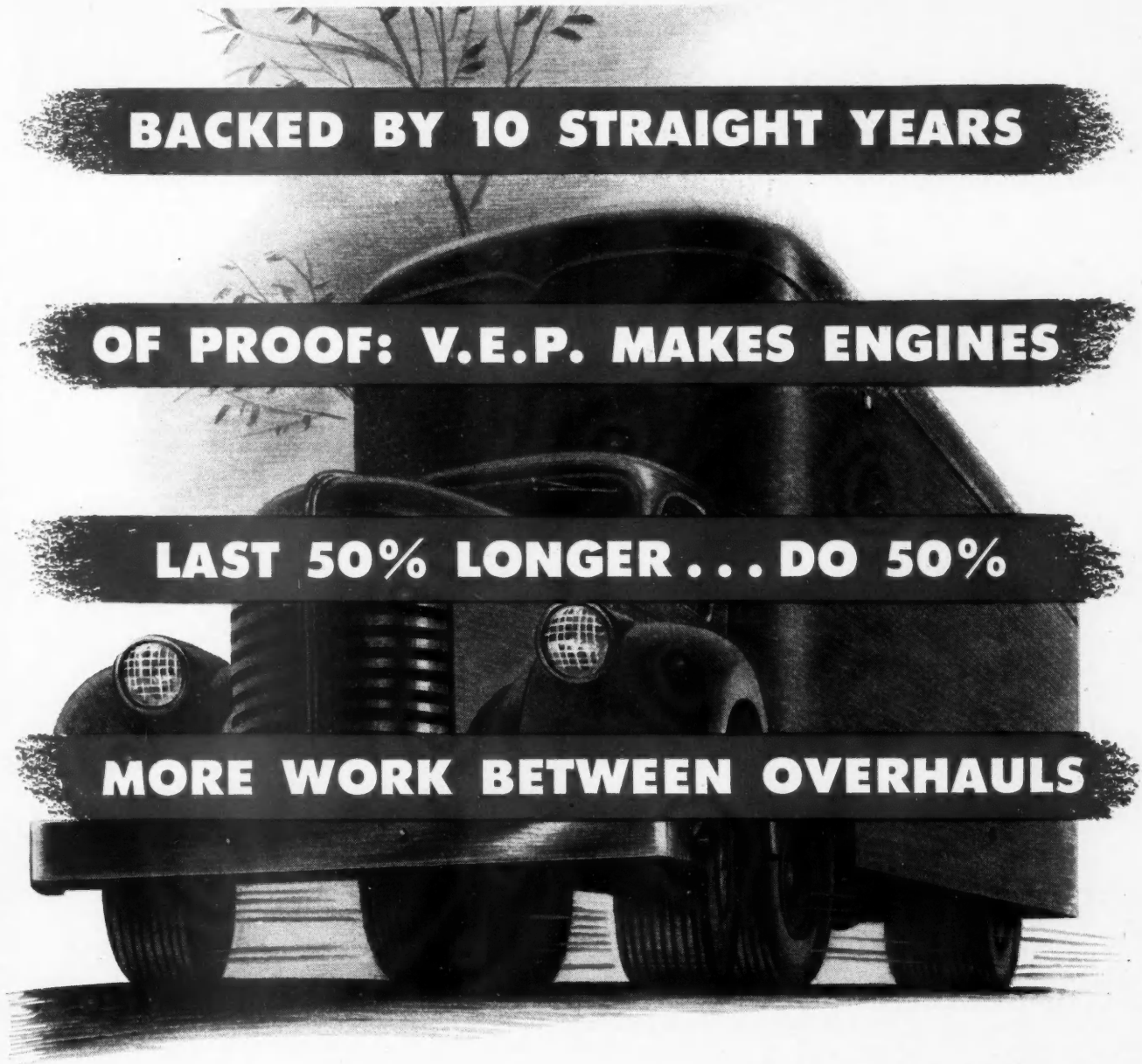
The braking power is more than doubled when in mid-action, the pressure within the *Mico Hy-Par* unit smoothly progresses from that of a low pressure cylinder to a line pressure up to 2000 lbs. Only Mico with its built-in relief valve can give you this tremendous braking power.



Ask your Dealer
or write for our four-color catalog

MINNESOTA AUTOMOTIVE, INC.

1332 Hennepin Ave.
Minneapolis 3, Minn.



Take the word of operators who have been using V. E. P. Oil exclusively in their fleets—many for 10 straight years. V. E. P. is *different.* V. E. P. is *proved.* Millions of miles of road travel confirm V. E. P.'s laboratory-tested claims of 50% longer engine life than with ordinary oil . . . 50% more pay-work between overhauls. No wonder more than 95% of the fleets who switch to V. E. P. *stay with it.* For see-for-yourself facts, call your local "Marathon Fleet Engineer" or write, wire or phone The Ohio Oil Company.

These V. E. P. "plusses" mean longer engine life, fewer overhauls.
Has 3 times the film strength of ordinary additive oils. Continuous cleansing action. Dissolves binder that holds sludge together. Frees stuck valves and rings. Prevents blow-by.
Reduces carbon and varnish to minimum.
Retards corrosion.
Free-flowing at low temperatures—greater "reaching" power. Non-foaming.
"Magnetic-like" action prevents dry starts.

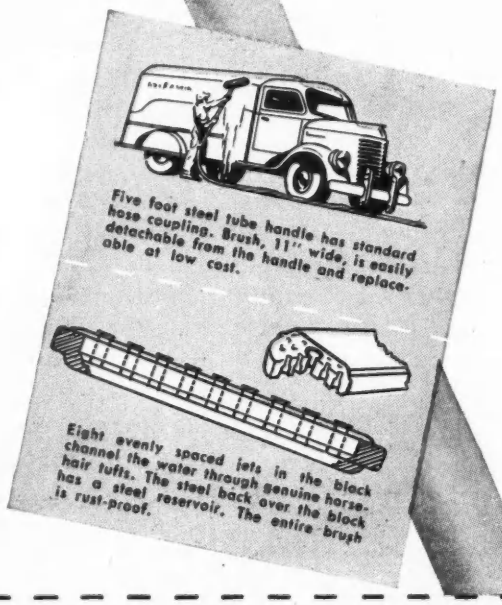
***Marathon V. E. P. 300 Series** meets rigid requirements of U. S. Army Specification 2-104B and has been used by the Ordnance Department. Approved by leading equipment manufacturers as a superior All-Purpose Lubricant and Heavy-Duty Oil. One of a complete line of Marathon greases and lubricants for every fleet requirement.*

The OHIO OIL COMPANY GENERAL OFFICES: FINDLAY, OHIO
District Offices: Robinson, Ill., Indianapolis, Ind., Louisville, Ky.
Producers of Petroleum since 1887

Take the Drudgery out of Truck Washing



This **SPEED WASH** fountain brush takes the drudgery out of truck washing. Clean, fresh water is continuously fed to the surface, from a standard size hose, through the handle and brush. Soaking, scrubbing and rinsing are done in one easy and fast operation. All told, the washing job takes about 10 minutes. Speed Wash fountain brushes have been proved on so many thousands of trucks, trailers and trains that they are sold on a money-back guarantee. Order yours today. Include check or money order for post-paid shipment. **$11.75**



MILWAUKEE DUSTLESS BRUSH COMPANY

526 NORTH 22ND STREET, MILWAUKEE 3, WISCONSIN

MILWAUKEE DUSTLESS BRUSH CO.
526 N. 22nd St., Milwaukee 3, Wis.

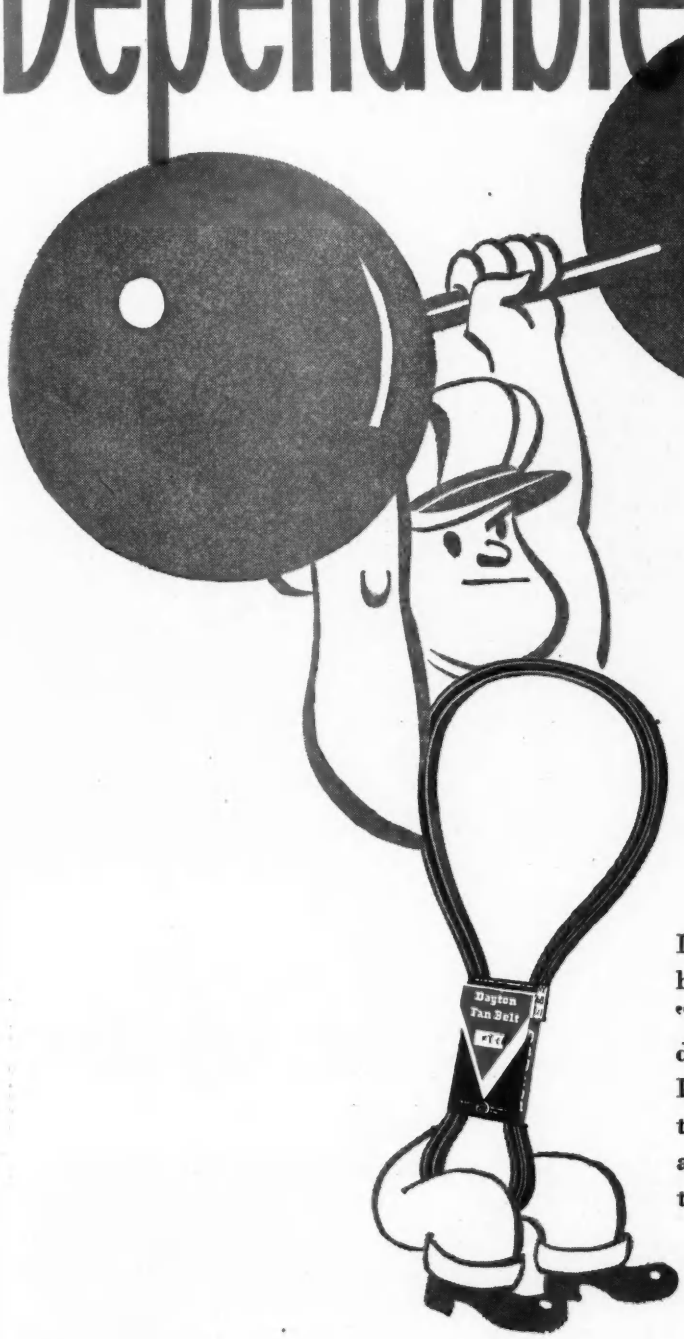
Please ship..... .Speed Wash brush(es). It is understood that we can return this equipment within 30 days for a full refund of our money if the Speed Wash doesn't prove entirely satisfactory.

Firm Name.....

Address.....

Please send us information on ☐ "Dustless" floor brushes ☐ "Speed Sweep" floor brushes ☐ Other floor maintenance aids.

Dependable strength!



THE NEW Dayton
HEAVY-DUTY
TRUCK BELT

In the tough, 24-hour grind of fleet service, fan belts take a tremendous beating. When a fan belt "goes" it usually means overheating and costly delay. So take a look at the new Dayton Heavy-Duty Truck Belt—it's the only truck belt with the open edge construction where you can actually see the dependable strength! For service that's traditional with truckers, use Daytons.

TRY A DAYTON BELT ON YOUR SPEEDOMETER



TRUCK BELTS BY

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

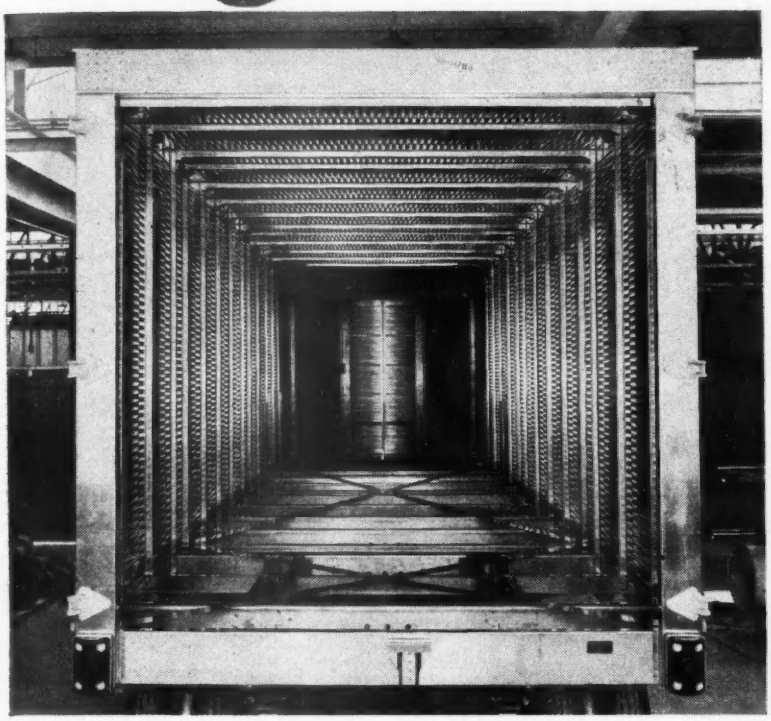


No other maintenance item is so far ahead of competition as the

PUROLATOR
MICRONIC OIL FILTER
KEEPS OIL FREE FROM ABRASIVES

PUROLATOR PRODUCTS, INC., NEWARK 2, N. J. In Canada: Purolator Products (Canada) Ltd., Windsor, Ontario

REPUBLIC Enduro STAINLESS STEEL



Thin and lightweight, yet tough and strong are these stainless steel structural members and sheathing which effectively reduce deadweight—proportionately increase payload—of this long-lasting trailer body.

Increases Payload Capacity

Here is a major advantage of Republic ENDURO Stainless Steel which no truck fleet operator should overlook. Actually, a closed-top trailer body made of ENDURO Stainless Steel has from 1,000 to 3,000 pounds greater payload capacity than an ordinary steel body of the same overall dimensions.

Why? Because of ENDURO's extremely high strength-to-weight ratio and corrosion-resistance. These two factors enable ENDURO to be used in thin—therefore lightweight—structural sections and sheathing, *without any sacrifice in strength or safety.*

This is but one of the many profit-boosting advantages of Republic ENDURO Stainless Steel. For complete information, talk with your equipment fabricator or write to:

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic ENDURO STAINLESS STEEL

REPUBLIC STEEL

Other Republic Products include Carbon and Alloy Steels—Pipe, Sheets, Strip, Plates, Bars, Wire, Pig Iron, Bolts and Nuts, Tubing

PRIOR
is again First with the Best



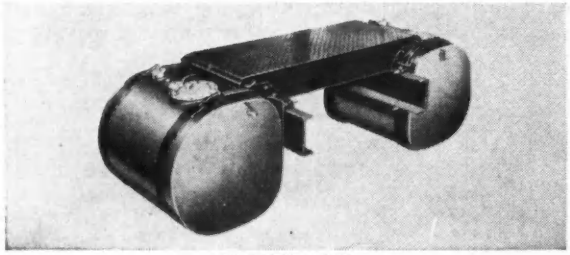
PATENTS PENDING

LAST MONTH we announced the Prior OB-Round Safety Tank—the greatest improvement in tank design since the inception of safety tanks. We now announce the addition of the Carter Electric Pusher Pump, which *eliminates vapor lock,* prevents pressure build-up which causes carburetor *flooding,* and insures *easier starting* under all conditions.

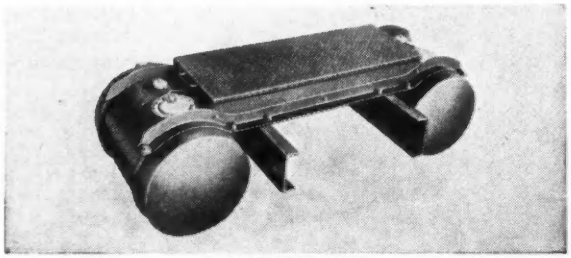
This motor-driven centrifugal pump, without valves, is installed inside and at the bottom of the tank. Fuel is delivered under pressure from the tank to the carburetor,—positively, steadily, with no pulsation. Fuel flowing through the pump provides cooling and lubrication. Natural siphoning is prevented by bleed inside tank. The entire assembly is protected from dirt and road hazards, and is easily serviced. Long, quiet life assured by the statically and dynamically balanced armature.

Proof of dependability: six long years of testing under severest conditions, plus gruelling service during the war. Underwriters' Laboratories listing, of course.

Equipment to receive the Carter Electric Pusher Pump is optional in all Prior Safety Tanks, OB-Round or Cylindrical.



OB-ROUND SETS



CYLINDRICAL SETS

WRITE, WIRE OR SEND THIS COUPON TODAY TO OUR NEAREST OFFICE

PRIOR PRODUCTS, INC.

BOX 349
MIDDLETOWN, OHIO

•

BOX 5686
DALLAS, TEXAS

Please send me complete information on Prior Safety Tanks equipped with Carter Electric Pusher Pumps and the name of your nearest distributor.

CCJ-347

NAME_____

STREET_____

CITY_____ STATE_____

FOR UTMOST RELIABILITY IN THE HEART OF THE FUEL SYSTEM



AVAILABLE FROM THE AC WHOLESALER

Your AC Fuel Pumps give you such dependable service and long life because *highest quality is built in,* from blueprints to finished products. There is one sure way to protect that reliability and durability,—insist upon AC pumps and parts.

FOR REPLACEMENT—install new AC Fuel Pumps or Authorized Factory-Rebuilt AC Fuel Pumps.

FOR REPAIRS—use AC Diaphragm or Parts Kits.

QUALITY FEATURES

- **Careful control of pressure and flow assuring correct fuel supply.**
- **Accurate hardening, precision machining of parts essential to long life.**
- **Accurate control of spring tensions and temper.**
- **High, and controlled, pin hardness.**
- **4-layer, patented-impregnation diaphragms of special airplane cloth.**
- **Carefully finished rocker arm pads, located to center on cam.**
- **Split-hair rocker arm clearance and control of pad hardness.**
- **Uniform pull rod hardness at pin holes.**

AC

FUEL PUMPS

SEND FOR AC SHOP MANUALS

Field Service Department, AC Spark Plug Division, G.M. Corporation
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop Manuals checked:

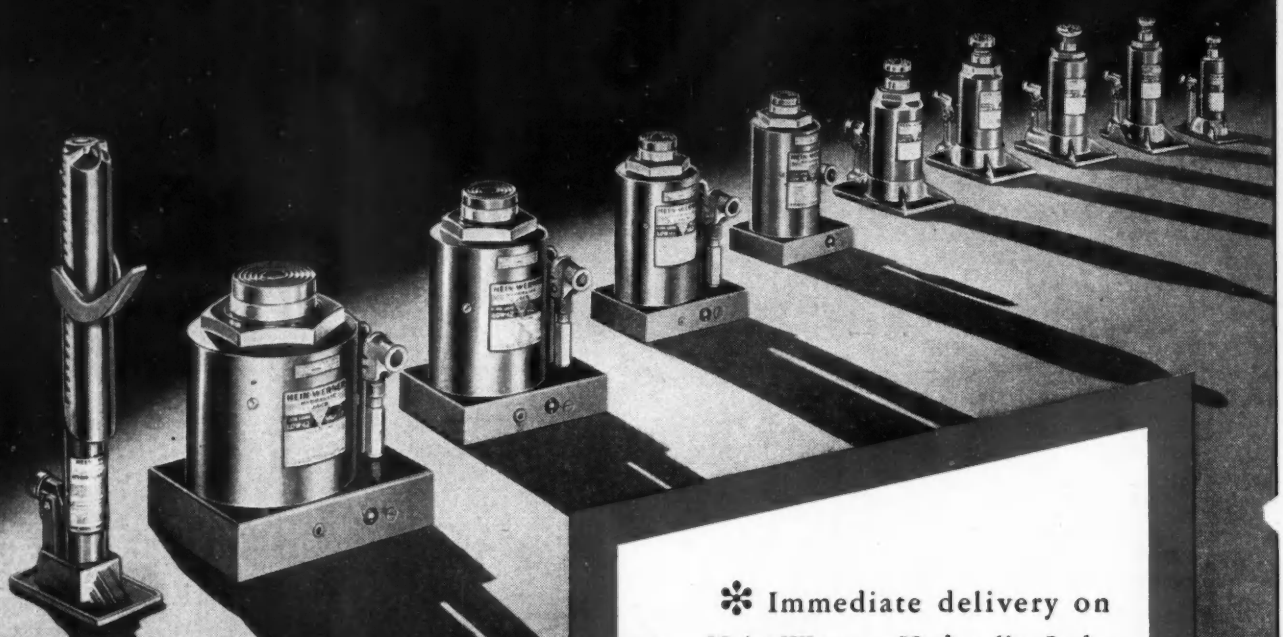
☐ How to Service Spark Plugs ☐ HOW TO SERVICE FUEL PUMPS
☐ How to Service Spark Plug Cleaner ☐ How to Service Air Cleaners
☐ How to Service Oil Filters ☐ How to Service Speedometers
☐ How to Service Ammeters and other Instruments CCJ-3

NAME_____
FIRM_____
STREET ADDRESS_____
CITY_____ STATE_____

Hein-Werner Hydraulic Jacks—

NOW BEING DELIVERED

. . . . IN EVER-INCREASING QUANTITIES



POWERFUL

ECONOMICAL

DEPENDABLE

EASY-OPERATING

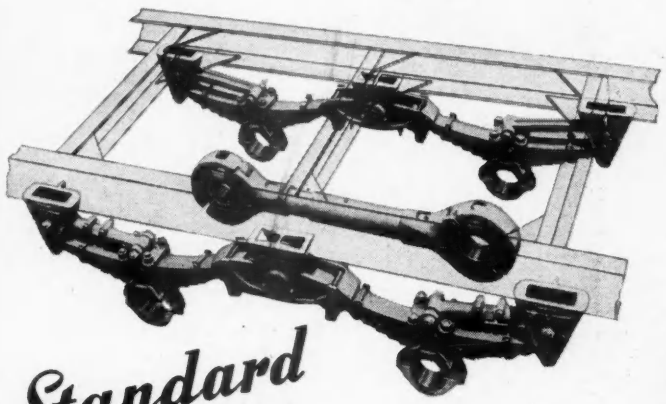
✻ Immediate delivery on Hein-Werner Hydraulic Jacks is now possible on practically all models. The complete line includes jacks of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity, as well as service jacks for shop use.

For details, consult your Hein-Werner jobber, or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER MOTOR PARTS CORP., WAUKESHA, WIS.

Faithful Service



Standard
UTILITY
DUAL AXLE UNITS



Standard
AXLES

PROVED IN 9 YEARS . . .

over the Roughest Going!

NO WHEEL BOUNCE! NO BRAKE CHATTER!
NO LOAD TRANSFER!

Only Standard-*Utility* Tandem Units with Torque Arm and Standard Axles provide trailer economies under all conditions of operating. Tubular axles absorb shock . . . Torque Arms of the Tandem Unit prevent braking forces from being passed on to a second axle. Thus, load transfer . . . wheel bounce . . . brake chatter are eliminated in Standard Tandem and Axle assemblies —brakes last longer . . . tire life increases . . . maintenance costs drop. Get acquainted with Standard-*Utility* Tandem Unit and Standard Axle *facts* now. Write *today* for complete engineering data!

MANUFACTURED BY

Standard Forge & Axle Company
MONTGOMERY 2, ALABAMA

AXLES BRAKES FORGINGS TRAILER PARTS

Fast-filling
Non-spilling



★ No blowbacks!
★ No overfilling!
★ No spillage from temperature expansion!
★ No "splash filling" evaporation!

On VENTALARM* equipped tanks one simple instruction suffices —

Open nozzle wide open —
"FILL TIL WHISTLE STOPS"
And your tank is *properly* filled.

As a fleet operator you should *not* continue the *waste* of spilled gasoline, the *inefficiency* in "dribble filling," the *loss* caused by splash filling, the *hazards* of gasoline soaked floors.

Twelve makes of buses, trucks and taxicabs now incorporate VENTALARM as standard equipment.

Make sure the gas tanks of your new equipment incorporate the VENTALARM Fill Signal.

SCULLY SIGNAL COMPANY
CAMBRIDGE 41, MASSACHUSETTS

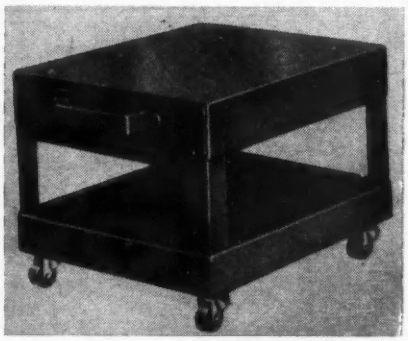
VENTALARM
GAS TANK FILL SIGNAL

New Products

(CONTINUED FROM PAGE 160)

P177. Mechanic's Scooter

The H. D. Campbell Co., Rochelle, Ill., has introduced a new four-wheel "Handy Andy" mechanic's scooter.

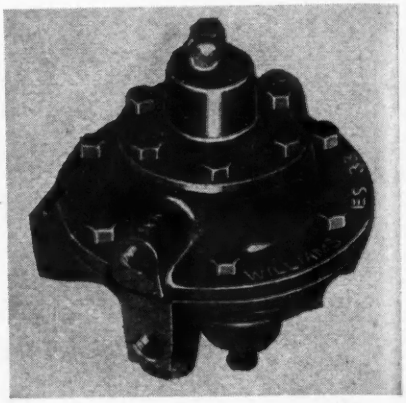


It features all-steel construction finished in metallic grey, with convenient shelf at the bottom for tools and drawer for small accessories. Dimensions: 11 inches high, 10 inches wide, 12 inches long. It weighs 10 lb.

Use Free Postcard For More Details.

P178. Automatic Valve

An automatic air line control valve, which provides automatic shut-off in a number of emergency situations, is offered by the Power Brake Equipment Co., Portland, Ore. Known as the Williams ES-33 valve, it is installed in any convenient position on the truck frame near the trailer hose connectors and eliminates the need for shut-off cocks.



The valve is set to automatically shut off both regular and emergency lines at 50 lb. of air pressure. Thus should trailer lines be parted either accidentally or manually a full 50 lb. will be maintained in the truck system and no air up to that amount will escape. The valve is also said to maintain safe braking conditions despite leaky relay valves, hoses, or diaphragms.

Use Free Postcard for More Details.

(TURN TO PAGE 220, PLEASE)

The APRIL Issue of COMMERCIAL CAR JOURNAL Will be the 11th "FLEET OPERATORS' REFERENCE ANNUAL"
•
Don't Miss It

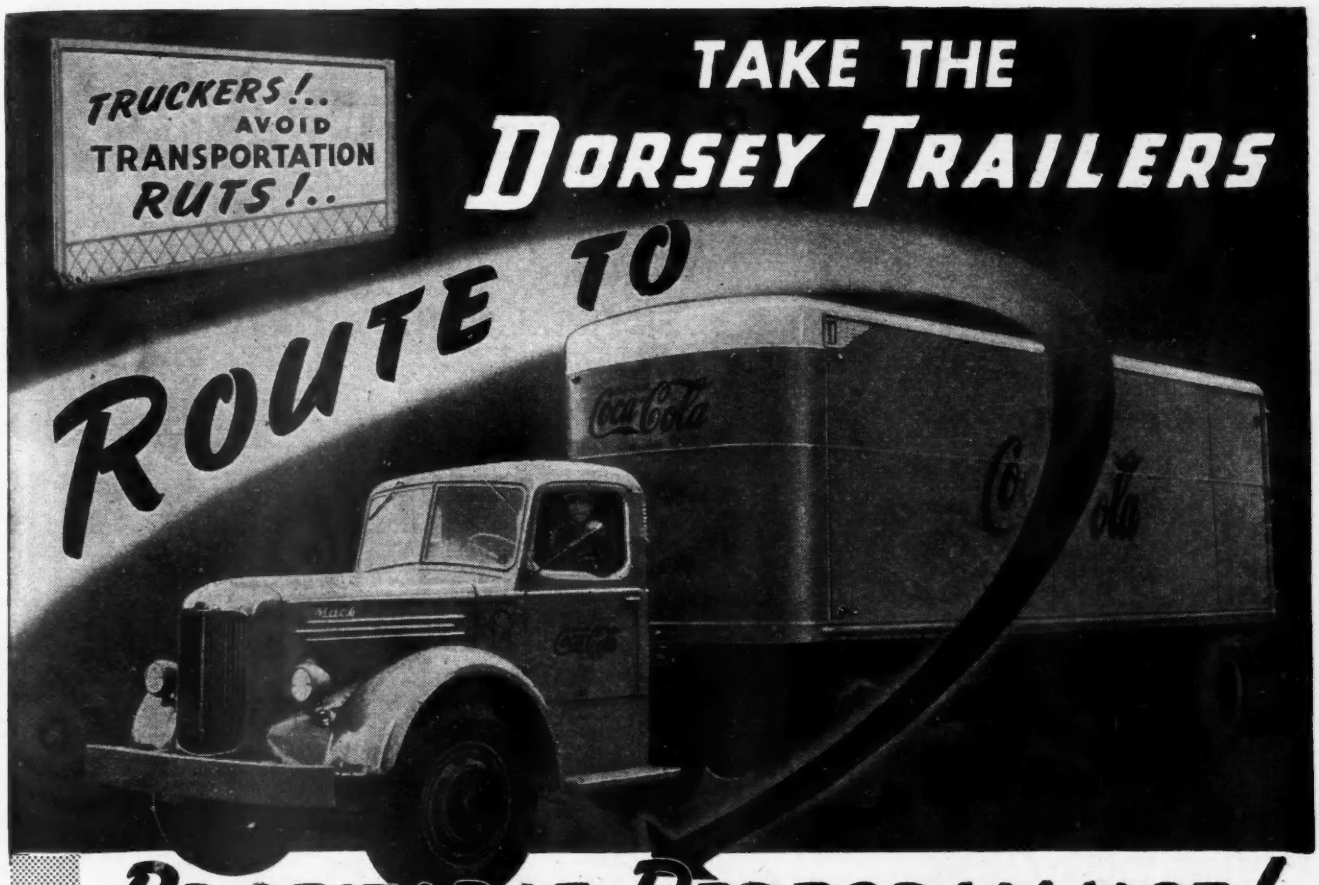


Remove any tire
16 to 24 inch
without hammering
with the
UNIVERSAL
Tire Removing Tool
$124.50
One tool does *all* jobs!



Remove Stubborn
King-pins
with the **UNIVERSAL**
King-pin Puller
for Ford cars .....only **$7.80**
Both items sold only through jobbers.
Prices FOB Birmingham, Ala.
Write today for free information

Universal Tire Tool Co.
918 Fifth Ave. N., Birmingham, Ala.



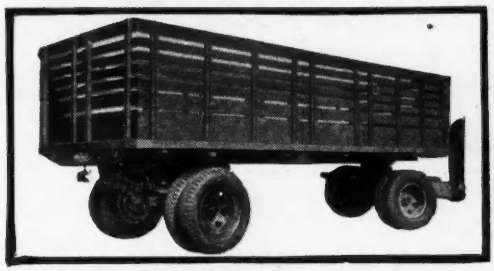
PROFITABLE PERFORMANCE!

Take the Dorsey low maintenance route to *Profitable Performance!* Many years of trailer building back up Dorsey claims to the best in transportation. Van operators far and wide rely on the Dorsey trademark as the symbol of completely balanced . . . skillfully engineered . . . thoroughly dependable transportation. You get all these factors in every Dorsey product . . . to give you minimum operating costs — the route to greater profit margin!

Call on Dorsey Trailers for every hauling job. In the wide Dorsey Trailer family, there is a unit to fit your needs. Dorsey Deluxe Vans — rugged, roomy, offering a maximum of cargo space . . . Dorsey Stake Bodies — designed for the specialized jobs of transporting livestock, grain and lumber . . . Dorsey Tilting Platforms — the jack-of-all-trades of the Dorsey family, adaptable to dozens of uses — with passenger cars, pick-ups, trucks. Name the job — then name Dorsey to do it!

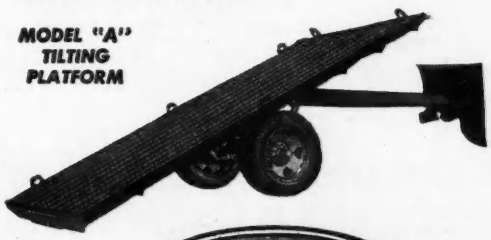
Dorsey's tubular axles absorb road shock and torsion, ease wear and tear on parts. Positive Action Brakes, with Passenger Car Control, guarantee safety on the highway. Thorough insulation reduces noise, further eliminating wear. Rugged straight-frame or drop-frame chassis stand up day after day under capacity loads. For the finest engineering gives you endurance, a longer life span in every Dorsey.

Dorsey Trailers have everything to make the perfect trailer — everything to make your hauling profitable. Check with your nearest Dorsey dealer or distributor *today.* Write for the new Dorsey bulletin *now.* Keep ahead in the trailer field!



MODEL "S" STAKE BODY

MODEL "A" TILTING PLATFORM



DORSEY

DORSEY TRAILERS

ELBA, ALABAMA, U. S. A.

Modern Designed Transportation


Truck Mounting of Snyder Saddle Tank

SAFETY SNYDER TANKS

Most Popular Safety Equipment In The Trucking Industry

Some Reasons Why!

1. 100% lapwelded construction.
2. Uniform strength throughout.
3. Equipped with Flame Guard Safety Valve. (Trade Mark No. 409422.)
4. New Fusible Filler Caps.
5. Slip Proof Deck Plate.
6. Designed to fold with a crash.
7. Approved by the Underwriters Laboratories, Inc.

Patent Numbers 2181772 - 2273737 - 2389168. Others pending. Also foreign patents.

When You Buy a Tank Buy "Snyder." For Catalog and Address of Your Nearest Distributor, Write:

SNYDER TANK CORPORATION

P. O. Box 14, Buffalo 5, N. Y.

SNYDER TANK CORPORATION P. O. Box 2390, Birmingham, Ala.

CRESCENT

Wiry Joe

AUTOMOTIVE CABLE

Manufactured by THE CRESCENT COMPANY, Inc. Pawtucket, Rhode Island

CHECK THE WIRE ON EVERY JOB

Ready for Delivery

EVANS TRUCK-CAB HEATERS

. . . with oversize core and superior defroster

See your local distributor or write direct to:

THERMO-AIRE DIVISION

EVANS PRODUCTS CO.

PLYMOUTH, MICHIGAN

THE COMPLETE LINE that Completely Satisfies

Since 1906

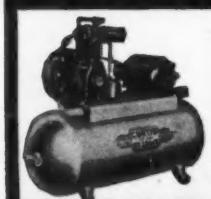
The Fitzgerald Mfg. Co. Torrington, Connecticut



Fitzgerald

GASKETS

Is it *Air* YOU WANT?



—then write for

BULLETIN CAS-2 *illustrating and describing Curtis Air Compressors*

...also ask for FREE Curtis Maintenance Check Chart.

CURTIS PNEUMATIC MACHINERY DIVISION

of Curtis Manufacturing Company

1970 Kienlen Avenue • St. Louis 20, Missouri

New Products

(CONTINUED FROM PAGE 218)

P179. Trailer Connector

Cole-Hersee Co., Boston, has a new heavy-duty lock-type trailer connector and plug, the latter being made of non-breakable screw machine products. The improved connector automatically locks

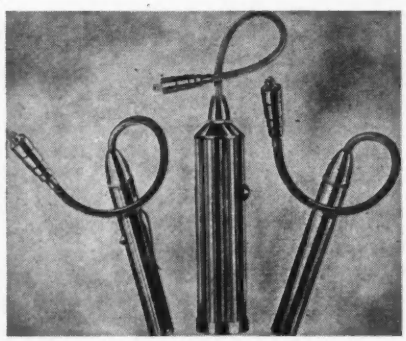


the plug into position, with a simple release for disconnecting. It has no external springs, rivets or hinges; all mechanism is totally enclosed in weatherproof enclosure. Six-pole style only.

Use Free Postcard For More Details.

P180. New Series Flex-Lite

A new series of "Flex-Lite" flashlights has been introduced by the Aero-Motive Mfg. Co., Kalamazoo. Each of the three new models has a long flexible extension



bulb-retainer by means of which shadowless light may be introduced into heretofore inaccessible areas.

Use Free Postcard for More Details.

(TURN TO PAGE 222, PLEASE)

ARMSTRONG

Specialists in Quality Tires Since 1912

TIRES

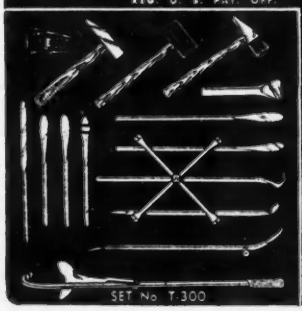
MORE POWER ON THE UPGRADES MEANS FASTER SCHEDULES

HALL-SCOTT "400" ENGINE

Hall-Scott Motor Car Company Berkeley 2, California Division of ACF-Brill Motors Company

KEN TIRE TOOLS

REG. U. S. PAT. OFF.



SET No. T-300

LEAD THE FIELD • ADVANCED DESIGN • QUALITY UNSURPASSED • SEE YOUR LOCAL JOBBER OR WRITE FOR LITERATURE •

KEN TOOL MFG. CO. AKRON 5, OHIO

The right braking material for any commercial vehicle

CUSTOM-BUILT SETS
CBB SETS
THERMO-BLOCKS

Thermoid

THERMOID COMPANY · TRENTON, N. J.

REPLACE WITH THE PISTON

7 OUT OF 10

Truck and Bus Manufacturers Specify as Original Equipment





Increases
Engine Performance
Reduces
Maintenance Costs

Through painstaking experiment, research and testing, truck and bus engineers select and specify every part of the vehicle they have designed. An overwhelming majority, over 70%, have placed their stamp of approval on Zollner Pistons. For the best in performance at lowest maintenance cost, follow the recommendation of these engineers—always specify Zollners.

ZOLLNER

ORIGINAL EQUIPMENT IN AMERICA'S FINEST MOTORS

ZOLLNER
MACHINE WORKS
FT. WAYNE • IND.

PISTON EQUIPMENT

For Internal Combustion Engines
Both Gasoline and Diesel

PAST records prove
PRESENT need for
FUTURE SAFETY!
AMERICAN SAFETY TANK CO.
KANSAS CITY, MO.

FOR ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS
Monmouth TRADE MARK is the name

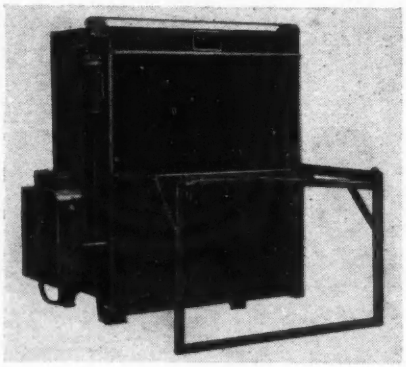
SALESMEN
Experienced Fleet Men
DIRECT TO USER SALES
Oil Filter Elements
REFILL FILTER CO.
120 Rhode Island Ave.
East Orange, N. J.

New Products

(CONTINUED FROM PAGE 220)

P181. Cleaning Machine

A heavy-duty spray type cleaning machine (illustrated) which features an open front cabinet and a special frame which permits work to be moved into the cabinet horizontally is announced by Mabor Co., Rahway, N. J. There are four sizes avail-

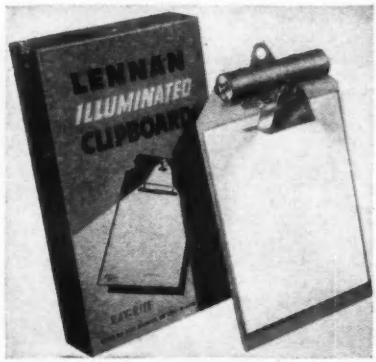


able and the largest is big enough to accommodate a diesel engine block.

Use Free Postcard For More Details.

P182. Lighted Clipboard

An illuminated clipboard, introduced by Lennan Lights, Inc., Burbank, Cal., should prove of considerable value to



drivers, mechanics and warehousemen where good light is not always obtainable. Two standard flashlight batteries power the light which is built into the strong spring-steel clip.

Use Free Postcard For More Details.

END

(Please resume your reading on P. 60)

HEAVY DUTY MOTOR TRUCKS
AND
GASOLINE ELECTRIC
GENERATING SETS
DUPLEX TRUCK COMPANY
Lansing, Michigan

WAUKESHA
Multi-Fuel
ENGINES
DIESEL OIL
GASOLINE
BUTANE
ALL LIQUID OR GASEOUS FUELS

DE VILBISS
Spray-Painting Equipment — Spray Booths — Canopy Exhaust Systems — Exhaust Fans — Air Compressors — Hose and Hose Connections — Oil Guns
Distributors or factory sales and service representatives everywhere
THE DeVILBISS COMPANY
Toledo 1, Ohio

CAMPBELL
Lug-Reinforced
TIRE CHAINS
THE CHAIN WITH THE SAW-TOOTH GRIP
U.S. Pat. No. 2,093,547 — Canadian Pat. No. 223,568
INTERNATIONAL CHAIN & MFG. COMPANY
YORK, PENNSYLVANIA

ZEHR
COLLAPSIBLE TRUCK BACKS
Safe . . . easy and simple to handle. Zehr Truck Backs are all-welded steel designed for great strength and long continuous service. They are theft-proof, rust-proof and flexible.
Write for details and prices.
ZEHR PRODUCTS COMPANY
2130 East Hazzard Street, Philadelphia 25, Pa.

IT'S SAFER TO SEE WITH
YANKEE
YANKEE METAL PROD., CORP.
NORWALK, CONN.

Tire Tools
FOR TIRES AND TUBES
Tire Demounters
Tire and Tool Branders
Tire Spreaders. Tube Vulcanizers
Everything for Tire Service
Write for
FREE CATALOG
KEEL & CO., Inc., Phila. 44, Pa.
KEEL & CO.



Get the JUMP on your competition ...use Heil truck tanks

... Heil dependability and smooth, streamlined appearance build greater customer acceptance for your products and larger profits for you

Heil Truck Tanks make prompt, efficient deliveries day after day. And, what is more important to you, they make more deliveries because (1) they are built to stand the gaff, (2) they carry larger payloads with no increase in gross weight, and (3) drivers get more done, thanks to convenient, easy-opening compartments, smooth-operating hose reel, reliable Heil power take-off and quick-opening Heil valves.

Customers like prompt, efficient service, and they pass the word along to their friends. They are also impressed when they see an attractively painted, graceful, streamlined Heil unit drive up and unload without any fuss or bother. The smooth-skin, unobstructed surfaces of a Heil Truck Tank with your name on it in large, easy-to-read letters act as a billboard — further reminding your customers that here's a man who knows his business.

Get a Heil Tank and enjoy trouble-free operation, greater acceptance for your products, and larger profits. Check these features — the backbone of famous Heil Truck Tank design:

- **One-piece, all-welded, boltless construction** acts as a sturdy beam. This construction, together with supporting bulkheads, provides maximum longitudinal and transverse strength, for ample protection against tortional strains and stresses.
- **Light weight,** as much as 15% lighter than conventional units using the same gauge metal, enables the operator to plan for increased payload.
- **Completely accessible** to welds, piping, and equipment. Maintenance time and costs are greatly reduced. Boltless construction further helps to keep costs down.
- **Undivided responsibility** means prompt, satisfactory service. Heil manufactures the complete unit — not only the tank, but also the hose reels, pumps, power take-off, connecting parts, universal joints, valves, etc.

T-217

Write for latest bulletins giving all the facts.

THE HEIL CO.
GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

Cal-Van
GARAGE TOOLS
2 and 3 FINGER TYPE
CARBON SCRAPER
LIGHT BULB PLIERS
RING COMPRESSORS
CREEPER CASTERS
BUSHING REMOVERS
REAMERS
GEAR PULLER
THREE-IN-ONE PULLER
WRITE FOR CATALOG
NO. 10 TIMING GEAR PULLER
Cal-Van
MACHINE PRODUCTS INC.
JACKSON, MICHIGAN, U.S.A.

CLEANER OIL
MEANS
• Longer Engine Life
• Lower Oil Expense
Write for Bulletin No. 837
MICHIANA PRODUCTS CORP.
Michigan City, Indiana
MICHIANA
OIL FILTERS

BE SURE
the trademark "Timken" is on every tapered roller bearing you buy. Timken bearings are first choice with truck and trailer manufacturers. Remember—for the best in bearings—
IT'S "TIMKEN"
The Timken Roller BearingCompany
Canton 6, Ohio

FOR PROMPT COMPLETE SERVICE ON AUTOMOTIVE PARTS...
Your NAPA Jobber is a Good Man to Know!
NATIONAL AUTOMOTIVE PARTS ASSOCIATION
Detroit 1, Michigan
NAPA
Assurance of Quality

WABER "Double Seal" TUBES
CANNOT RIMPINCH
SEAL PUNCTURES
In All Sizes
Send For Prices
THE WABER COMPANY
1120 S. MICHIGAN AVE. CHICAGO 5, ILL.

Newscast

(CONTINUED FROM PAGE 85)

NEW LOCKING DIFFERENTIAL

A new series "E" NoSpin differential for two-speed axles of the Eaton 1350 series is announced by Detroit Automotive Products Corp., successor to the Thornton Tandem Co. The series is adaptable to a number of Ford, Dodge, Fargo, International, Federal, GMC and Diamond T models equipped with the Eaton two-speed unit. In all, the company has four basic series of its NoSpin differential in production.

MORE BUTYL TUBES

Butyl, formerly prohibited in tubes 7.00 in. and larger, may now be used in all sizes according to a recent ruling of the Civilian Production Administration. Manufacturers now have their choice of either Butyl or natural rubber for use in truck and bus tubes; although natural rubber is still prohibited in passenger car tube sizes.

ACCIDENT REDUCTION

As the direct result of an intensified safety program, Sheffield Farms Co., Inc., New York, reduced its 1946 vehicle accident rate by 30 per cent over its 1945 figure despite a marked increase in the industry's over-all figure. Sheffield also showed a drop of 20 per cent in its employee-injury accident rate.

(TURN TO PAGE 226, PLEASE)



Using Revere Copper & Brass magnesium sheets and shapes, this new Purity Baking Co. (Charleston, W. Va.) body weighs 1060 lb. compared with 2300 lb. for the same job in steel. Fleet operates 3,000,000 miles per year, estimates that if all its trucks had magnesium bodies there would be a gasoline saving of $1,000 per month

Specify
Velvetouch
BIMETALLIC FRICTION MATERIAL
for
CLUTCHES AND BRAKES
THE S. K. WELLMAN CO.
CLEVELAND, OHIO

KINNEAR Rolling Doors
On truck bodies or buildings, Kinnear Doors are efficient, dependable, economical. Steel-slat curtain coils upward, out of way. Any size; motor operation if desired. Write for details.
THE Kinnear Manufacturing Company
2100-20 Fields Avenue, Columbus 16, Ohio

UNITS AVAILABLE
GRICO
2-AXLE DRIVE
19842 W. Eight Mile Rd.
Detroit 19, Michigan

Snap-on Tools
THE CHOICE OF BETTER MECHANICS
SNAP-ON TOOLS CORPORATION
8026-C 28th AVE. KENOSHA, WIS.

BETTER than Ever Before
Repower with
RAMCO
10 up
PISTON RINGS

FOR SAFE BRAKING *and to* SAFEGUARD BRAKES

DELCO SUPER 9



Delco Super 9 hydraulic brake fluid is safe and dependable *always* . . . under the most severe braking conditions, at any season of the year. From 50° below zero to 300° above, it remains chemically stable and efficient.

In addition, Delco Super 9 helps keep brake parts clean and in good working order. It will not foul, gum or corrode cylinders, pistons or other metal parts . . . will not swell rubber parts. Maintenance work is less frequent and less expensive with long-lasting Delco Super 9.

Do this for top *year-round* braking efficiency: remove dirt and gum from hydraulic systems with Declene flushing fluid . . . then refill with Delco Super 9 hydraulic brake fluid.

DELCO BRAKE REPAIR PARTS

for Light Trucks, Commercial Cars and Taxicabs

When you buy Delco replacement parts, complete wheel cylinders and master cylinders, you get, in factory-sealed containers, the same original-equipment parts used on leading makes of light trucks, commercial cars and taxicabs.

DELCO BRAKE—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

UNITED SERVICE MOTORS

Delco
SUPER 9 BRAKE FLUID
DECLENE • BRAKE PARTS

MORAINE PRODUCTS
DIVISION OF
GENERAL MOTORS

STANDARD FOR EQUIPMENT • *THE* STANDARD FOR REPLACEMENT

ELECTRIC
ELSTON
SANDERS
HIGHWAY SAFETY
APPLIANCES INC.
1381 MARSHALL AVE.
ST. PAUL 4, MINN.

CLUTCH DIAPHRAGM PLATES
FOR
BUICK · CHEVROLET · PONTIAC
FOR
Wohlert
CORPORATION
LANSING 5 MICHIGAN

Permalux
FINER DECALCOMANIA
FIRST IN { APPEARANCE / ECONOMY / DURABILITY
Made With DuPont "DULUX"
Write Today for details
THE PERMALUX COMPANY
500 Rathbone Ave. • Aurora, Ill.

FRINK
SNO-PLOWS
REG. U.S. PAT. OFF.
Both "V" TYPE and
ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS
FROM 1½ to 10 TONS
CARL H. FRINK, Mfr., CLAYTON, 1000 Isl., N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.



Gatke
CUSTOM-BILT
BRAKE LININGS
GATKE CORPORATION 228 N. La Salle Chicago 1, Ill.

Available Trucks
1½ TO 20 TONS
TRUCKS • TRACTORS
TRAILERS • BUSES
(SINCE 1910)
TELEPHONE—BRUNSWICK 1100
AVAILABLE TRUCK CO.
2501 ELSTON AVE.—CHICAGO 47, ILL.

Newscast

(CONTINUED FROM PAGE 224)

BRAKE FLUID STANDARDS

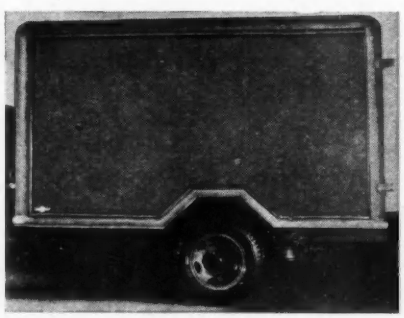
As an outgrowth of work initiated in 1936 the Society of Automotive Engineers will publish standards for hydraulic brake fluids in the 1947 issue of the SAE handbook. The specifications cover heavy-duty and moderate-duty fluids with reference to water tolerance, boiling, flash and cold points, neutrality, stability, rubber swelling and corrosion limitations. The heavy duty fluids must have a temperature range from 40 deg. below to 130 deg. above zero F.; the moderate-duty fluids from —30 to plus 130.

SEEKS UNIFORM REGISTRATIONS

In an effort to formulate a satisfactory plan for uniform and efficient classification and registration of trucks, the Association of Casualty & Surety Executives has set up a special committee on Uniform Methods of Registration of Motor Trucks. Appointments of five committee members from the 16 northeastern states represented in the Regional Conference on Highway Safety have been confirmed.

When the committee is fully organized, representatives of the trucking industry, automobile manufacturers and casualty insurance companies will be invited to attend meetings to advise on the methods and procedure being considered. The decision of the committee will ultimately be placed in the form of a model law.

(TURN TO PAGE 228, PLEASE)

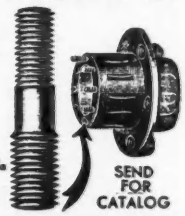


Equal distance from tires at top and sides regardless of load is the trick of this new Oltman-O'Neill wheel-house model. Company now has a production rate of 5000 all-steel bodies a year

for SAFETY
REFLECTORS • LAMPS • FLARES
GROTE
GROTE Manufacturing Company, Inc. Bellevue, Ky.
Automotive Sales Office: Moorestown, N. J.

JOYCE
LIFTS & JACKS
Single and 2-Post Lifts for all types cars, trucks and buses. New ultra-modern design; simplified installation; level, clear floors; air or electric power. Also Lift-master Nu-Hydro Jacks—forged steel construction. *Ask for Bulletins.*
THE JOYCE-CRIDLAND CO., DAYTON 3, OHIO

OVERSIZE AND STANDARD
REAR WHEEL STUDS
for all Trucks
ORDER FROM YOUR JOBBER
CHAMP-ITEMS, Inc.
6191 Maple Ave.
St. Louis 14, Mo.
SEND FOR CATALOG



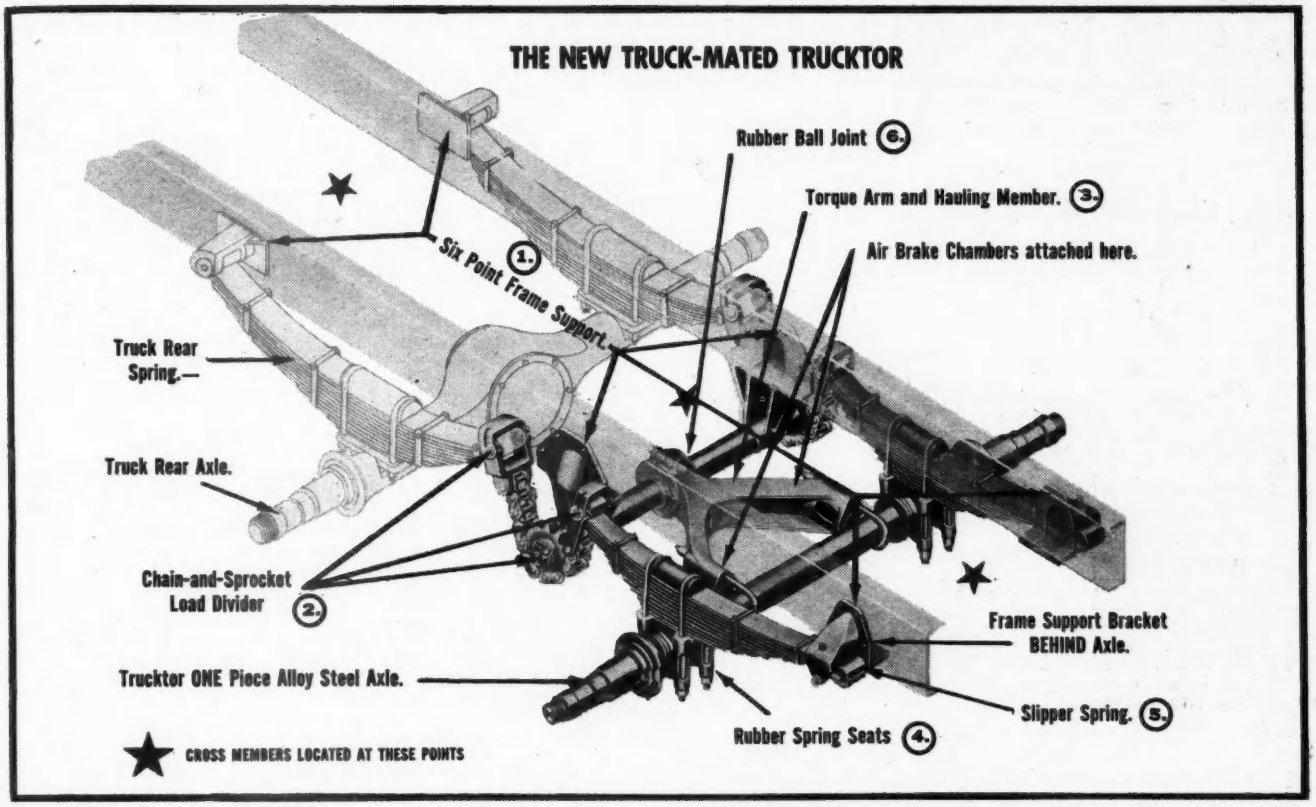
AUTOPULSE
ELECTRIC FUEL PUMP
• Uninterrupted Schedules
• Instant Starting
• Greater Economy
• No Vapor Lock
• Added Protection
AUTOPULSE CORP., DETROIT



YOU MAKE MORE MONEY on BLUE CROWN HUSKY
AND YOU SELL THE BEST
AMERICA'S FINEST SPARK PLUGS



The Improved TRUCKTOR 3rd Axle ...Better than ever!



HERE'S HOW YOU CAN INCREASE VALUABLE PAYLOAD CAPACITY:

- By converting light or medium duty 4-Wheelers into heavy-duty 6-Wheelers of 28,000-34,000 lbs. g.v.w. capacity.
- By converting light-duty 4-Wheel tractors or trucks into heavy-duty 6-Wheel tractors capable of hauling 46,000 lbs. g.v.w. capacity.
- By converting heavy-duty 4-Wheelers into heavy-duty 6-Wheelers of 40,000-50,000 lbs. g.v.w. capacity.

THE NEW Trucktor Third Axle is simpler and sturdier than ever before. One of its principal features is the new chain-and-sprocket load divider which distributes the load more evenly between both axles. Its more flexible operation permits full equalization between both axles for all road inequalities. The divider reduces maintenance costs—and has only four lubricating points in place of the previous ten.

Remember Trucktor Third Axles—for greater capacity—greater safety—greater economy of operation.

Check these TRUCKTOR design Features

1. Six point body support for greater stability and less fatigue.
2. Chain-and-Sprocket load divider distributes load evenly between both axles.
3. Torque Arm and Hauling Member assure accurate tracking of wheels—absorb torque—relieve strains.
4. Rubber Spring Seats eliminate road shocks and vibration—require no lubrication.
5. Slipper Springs maintain constant tension—eliminate noise.
6. Rubber Ball Joint assures easy steering and sure braking.

THE TRUCKTOR CORPORATION
156 WILSON AVENUE • NEWARK 5, N. J.

Trucktor THIRD AXLES

MAKERS OF THIRD AXLE UNITS EXCLUSIVELY

DAYTON Spoke Type Steel
WHEELS
AIR-COOL
BRAKE DRUMS AND TIRES
FOR TRUCKS, TRAILERS AND BUSES.
THE DAYTON STEEL FOUNDRY CO.
DAYTON, OHIO

Specify
Claw
Double-Duty
TRUCK CHAINS
Columbus McKinnon Chain
CORPORATION
TONAWANDA, N. Y.

NATIONAL SALES ORGANIZATION SEEKS ADDITIONAL ITEMS FOR TRUCK AND TRAILER MARKET

Our Client, a national sales organization, has ample facilities and capital for the development, sales promotion and manufacture of an item (or idea) of merit for the Truck and Trailer field. Your correspondence is invited and will be treated in the strictest confidence. Address: Campbell & Reynolds, 43 E. Ohio St., Chicago 11, Illinois.

AMERICAN
BOSCH
AUTOMOTIVE & AVIATION
ELECTRICAL PRODUCTS
FUEL INJECTION EQUIPMENT
American Bosch Corporation
Springfield, Mass.

DECALS
for FLEET MARKING
Costs less than hand lettering. Does not tie up equipment.
Quantities—50 pieces or more any size.
Can reproduce any art work.
Prompt Delivery
EXCELLO SPECIALTY CO.
4101 East 100 St. Cleveland 5, Ohio

Newscast

(CONTINUED FROM PAGE 226)

TOOL MAKERS ORGANIZE

To better coordinate their efforts in serving the automotive service industry, 39 nationally-known makers of shop equipment and tools have formed an organization to be known as the Equipment and Tool Institute. Lynn F. Woolman, former vice-president of Allen Electric & Equipment Co., was elected executive manager with temporary headquarters in Kalamazoo, Mich.

AUTOCAR RECORD BOOK

"A Year's Record of Motor Truck Operation" is the title of an 11 x 9 in. booklet published by Autocar Co., Ardmore, Pa. Allotting two pages a month on a begin-any-time basis for daily entry and monthly total of all operating costs, the booklet affords an excellent record system. One book is usually used for each truck. Single copy price is 25 cents.

TAX REPEAL URGED

"Highway Users Urge Federal Automotive Excise Tax Repeal" is the title of a study prepared by the National Highway Users Conference." The publication points out that such taxes have always been "emergency" measures, that they originated during World War I, were extended during depression years, increased during World War II and have amounted to a total of $7,344,796,397.

TACHOMETER CATALOG

A new sixteen page catalog featuring the extensive line of Tachometers manufactured by Jones Motrola Corp., 413 Fairfield Ave., Stamford, Conn., is available upon request to the company. This catalog describes and illustrates different Tachometers for particular applications, lists ranges and driving ratios, and other pertinent information.

END

(Please resume your reading on P. 86)



Three winners of Electric Auto-Lite safety contest receive their awards at ATA Louisville meeting. The winners (l. to r. with certificates) are: Chester Loving, Aetna Oil Co.; Jack Biery, Huber & Huber Motor Express, and Bishop Wilcox, Moffet Transfer lines. Two men on the ends are John Baker and Carl Stevens of Auto-Lite and Capt. L. E. Chadoin of the Louisville Police is making an award

Belden
Automotive WIRE

SERVICE-PROVED
YEARS of toughest service prove Blackhawk Hydraulics superior in safety, rugged dependability and utility. "Service-Proved" Seal found only on Blackhawks. Only complete line of hydraulic hand jacks—models up to 50 tons capacity.
BLACKHAWK MFG. CO.
Dept. J1137, Milwaukee, Wis.
BLACKHAWK

KEEP YOUR VEHICLES MOVING ECONOMICALLY
with
HALL VALVE SERVICING EQUIPMENT
Ask Your Jobber or write
THE HALL MFG. COMPANY
TOLEDO 7, OHIO

When the Motor is Down
Build it Up with...
Allied
MOTOR PARTS
ALLIED MOTOR PARTS CO.
DETROIT 1, MICHIGAN

Stop LOCKING AND SKIDDING FRONT WHEELS
Install a
HYSPECO
HYDRAULIC PRESSURE
LIMITING VALVE
IN THE FRONT WHEEL BRAKE LINE OF YOUR POWER BRAKE INSTALLATION JOB
HYDRAULIC SPECIALTIES CO.
27 MECHANIC ST. - BUFFALO 2, N. Y.

"OKEH!"

For the Red Arrow Lines

● LEFT: *Otto Kinzler, master mechanic, Red Arrow Lines, Upper Darby, Pa.* RIGHT: *W. E. McIlroy of Bearings, Inc., Authorized SKF Distributor.*



When the man in charge of bus and car maintenance talks to an Authorized SKF Distributor, the main topic of his conversation is apt to be bearing performance—and the dependable performance of SKF Bearings in particular. The phrase, "SKF Bearings are okeh!", sums up the opinion of Otto Kinzler, who is responsible, among other duties, for keeping 102 buses, 50 trolley cars, 8 trucks and 3 passenger cars in working trim for the Red Arrow Lines. This fleet—which includes ACF, Mack, GMC, Twin Coach and White buses and J. G. Brill double-end trolley cars—serves suburban communities in Delaware, Montgomery, Philadelphia and Chester counties. Bus engines and transmissions—mostly Spicer—undergo a complete checkup every 35,000 to 40,000 miles; trolley cars with Westinghouse motors and Nuttall double-reduction drives approximately every 10,000 miles. And SKF Bearings give a good account of themselves. Their ability to reduce wear on rotating parts, lower mileage costs, and to assure on-time schedules makes them "*Okeh!*" with maintenance men everywhere. If *you* have a bearing problem, put it up to your nearest SKF Distributor.

6219

SKF INDUSTRIES, INC.
Front St. & Erie Ave., Phila. 32, Pa.



FLEETMAN'S LIBRARY

A Review of Booklets and Catalogs Fleetmen will find helpful

READY REFERENCE MANUAL, covering ICC regulations applicable to private motor trucks—prepared by the National Council of Private Motor Truck Owners. This revised edition (105 pages, loose-leaf) is offered to all private truck owners and other interested parties at a subscription price of $7.50 per copy. This includes the complete Manual with all supplementary revisions thereto for a one-year period. Write NCPMTO at 1015 National Press Building, Washington 4, D. C.

U. S. GOVERNMENT VISUAL AIDS CATALOG, published by Castle Films and listing many new films released during the year for school and industrial training purposes. Free to all schools and industrial plants equipped to use visual aids. Write Castle Films Division of United World Films, Inc., 30 Rockefeller Plaza, New York 20, N. Y.

CATALOG No. 646, on Viking Instruments, containing 30 pages of instrument listings of protective equipment for internal combustion engines. This revised edition is available from Viking Instruments, Inc., East Haddam, Conn.

BLACKHAWK JACK CATALOG, No. J-46, showing product listings and suggesting unusual applications and services with Blackhawk jacks. Also available is the new BLACKHAWK PORTO-POWER CATALOG, No. P-46, covering Porto-Power service in repairing, rebuilding and reconditioning. Write Blackhawk Mfg. Co., Catalog Dept., Milwaukee 1, Wis.

NEW DAVISBILT CATALOG containing 64 attractively colored pages of product listings of particular interest to users of tank trucks. Write the Davisbilt Products Co.

WHEEL BALANCE WEIGHTS AND EQUIPMENT CATALOG, 12 pages of product listings for wheel balancing. Write Harley C. Loney Co., Detroit 21, Michigan.

TESTING PRICE LIST, a 32-page booklet featuring specific test charges for textiles, chemicals, plastics, metals and other materials, available from The United States Testing Co., Inc., 1415 Park Laboratories, Hoboken, N. J.



Geo. F. Alger Co., Detroit, goes all-out to publicize the ATA safety slogan, backs up its sign painters with a pledge for full safety cooperation

BOOKLET ON HEAVY-DUTY TRANSMISSIONS, a 20-page publication showing factors to be considered in selecting the proper transmission to be used with trucks of various sizes and horsepower capacities. Available from the Fuller Mfg. Co., Kalamazoo, Mich.

TECHNICAL ADVISOR, a monthly technical paper devoted to publicizing latest recommendations on how to use aluminum mill products most effectively. The periodical will be sent free upon request to Technical Editorial Service, Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.

RESISTANCE WELDING MANUAL—REVISED EDITION, featuring instructions and data on resistance welding procedures. Includes numerous additions, based upon research and experimental work conducted during the war production period. Tables of recommended procedures have been revised; a new section contains chapters on quality control, standard tests and instrumentation. Each group of metals is treated individually, showing resistance welding properties of the material with explanations of the relative importance of the various operating variables and schedules of recommended welding conditions. Published by Resistance Welder Mfgs'. Assn., 505 Arch St., Philadelphia 6, Pa. Contains 552 pages. Price $3.00 post paid.

SERVICE INSTRUCTION MANUAL ON UNIVERSAL JOINTS, a 48-page instruction book showing popular types of joints, with reference and cross section for replacement part numbers. Contains trouble shooting information and general service information on 18 types of joints. Available from New England Products Corp., Pottstown, Pa., at 50 cents per copy.

NEW ARO CATALOGS, No. 4 AND No. 464, describing a complete line of air tools for automotive service managers, garages and fleet owners. Features more than 35 new individual air tools recently developed by the company. Write the Aro Equipment Corp., Bryan, Ohio.

NEW BOOKLET TCF-46 describing the Master Grip and Sterling Wearwell tire chain line, containing all standard chain sizes for passenger cars as well as single pneumatic types for trucks and buses. Copies may be secured from Cleveland Chain & Mfg. Co., Cleveland 5, Ohio.

DAVEY HEAVY-DUTY POWER TAKE-OFF BULLETIN, describing seven models of take offs, listing operating principles, installation data and complete specifications. Write the Truck Equipment Division, Davey Compressor Co., Kent, Ohio.

GLASS FABRIC TIRE

Tires using high-strength glass cord fabric have been produced by Pharis Tire & Rubber Co., on a purely experimental basis. While material costs and manufacturing problems make the new tire commercially unpractical at the moment, initial tests showed that a 2-ply glass-cord tire was 40 per cent stronger than a 4-ply rayon cord tire, that resistance to heat was impressive and that in the 6.00 x 16 size the new tire weighed three pounds less.

FORGOTTEN MAN

The effect of jolts, jars, jerks, bumps and shocks absorbed by the average truck driver is the subject of an amusing but none-the-less authoritative study by the Monroe Auto Equipment Co. It seems the ailments range from simple headache and backache to kidney disturbances and colitis and include hematuria, prostatitis, sciatica, hemorrhoids and lumbar lordosis. Leg aches ordinarily associated with riding in a flexed position now are revealed as resulting from the irritation of lumbar nerves. In several cases, reports have disclosed that even traumatic arthritis and intravertebral disc absorption or atrophy are caused by the rough riding effects of the trucker's daily travel.

Truxmore Improves Third Axle Line

An improved line of Truxmore third axles made by the Truck Equipment Co., Buffalo, N. Y., is announced by the Truckstell Co., national distributors. The new series continues to feature the gravity spring suspension.

Improvements on the new 1947 line include a newly designed load shifter and increased cross-shaft bearing areas automatically lubricated from oil reservoirs in the frame brackets. Oilless bearings, lubricated for life, replace ordinary bronze bushings at the ends of the long links. Forgings replace castings wherever possible to increase life and reduce maintenance. Stamped hub caps replace cast hub caps. The brake torque arrangement has a new oscillating bearing.

Howard D. Lynch, Truckstell sales manager, said the Buffalo plant currently is producing series 280 for 8.25 x 20 duals and series 340 for 9.00 x 20 duals. Two larger model axles for 10.00 x 20's and 11 x 20's will go into production soon.



Fred Seitz of Cincinnati covers 500 miles a week with Mack-powered rolling fruit and vegetable store. Note the two full-height walk-in doors



Announcing a **NEW,** *improved*

AC GASOLINE STRAINER

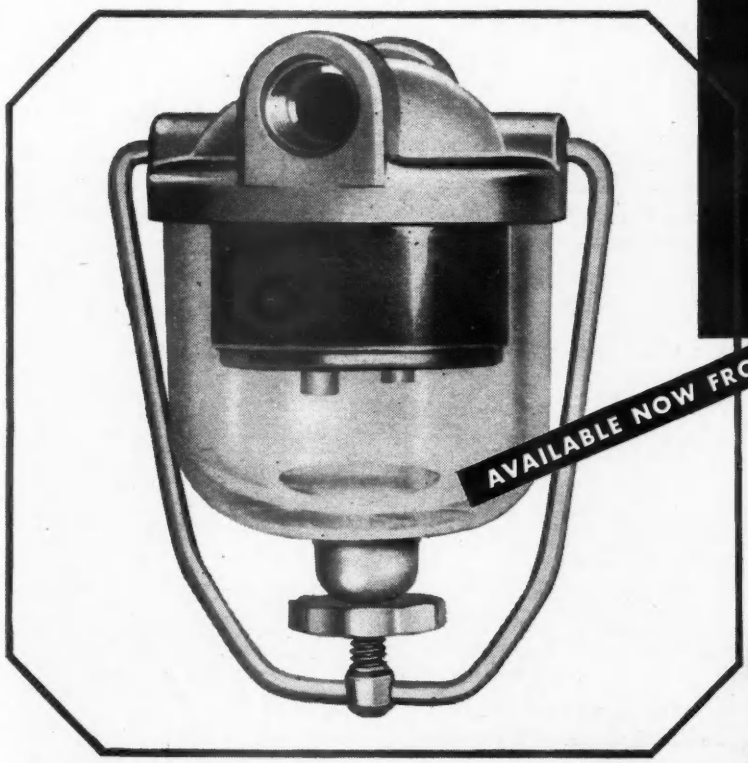
with new, high efficiency Replacement Element of patented "Fiberite" Disc Type

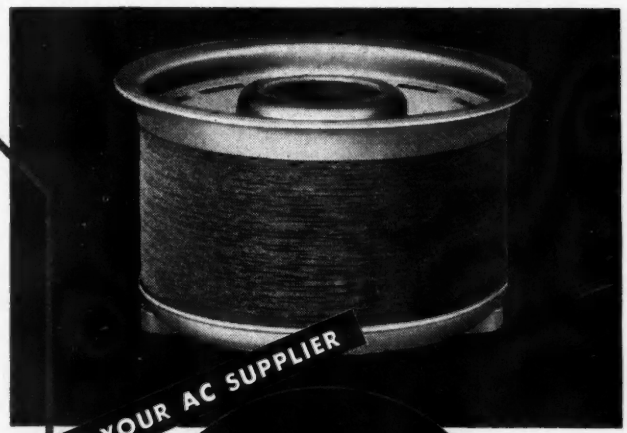
NOW, the AC Gasoline Strainer element used in U. S. combat and transport vehicles in World War II is available to you, for the first time. This high efficiency AC element is *100% non-abrasive,* water-proof, acid-proof, and rust-proof.

This remarkable element keeps lint, dust, dirt, abrasives, and water out of the carburetor. It affords full protection for jets, needle valves, and valve seats, and promotes full carburetor efficiency and fuel flow.

Gasoline enters the "Fiberite" element from *inside and outside,* doubling the straining area. Element replacement takes only a few seconds . . . installation is very simple.

Avoid delays on the road, and damage to carburetor parts and adjustment, by installing this low cost, highly efficient AC Gasoline Strainer. It's completely safe, and completely reliable.



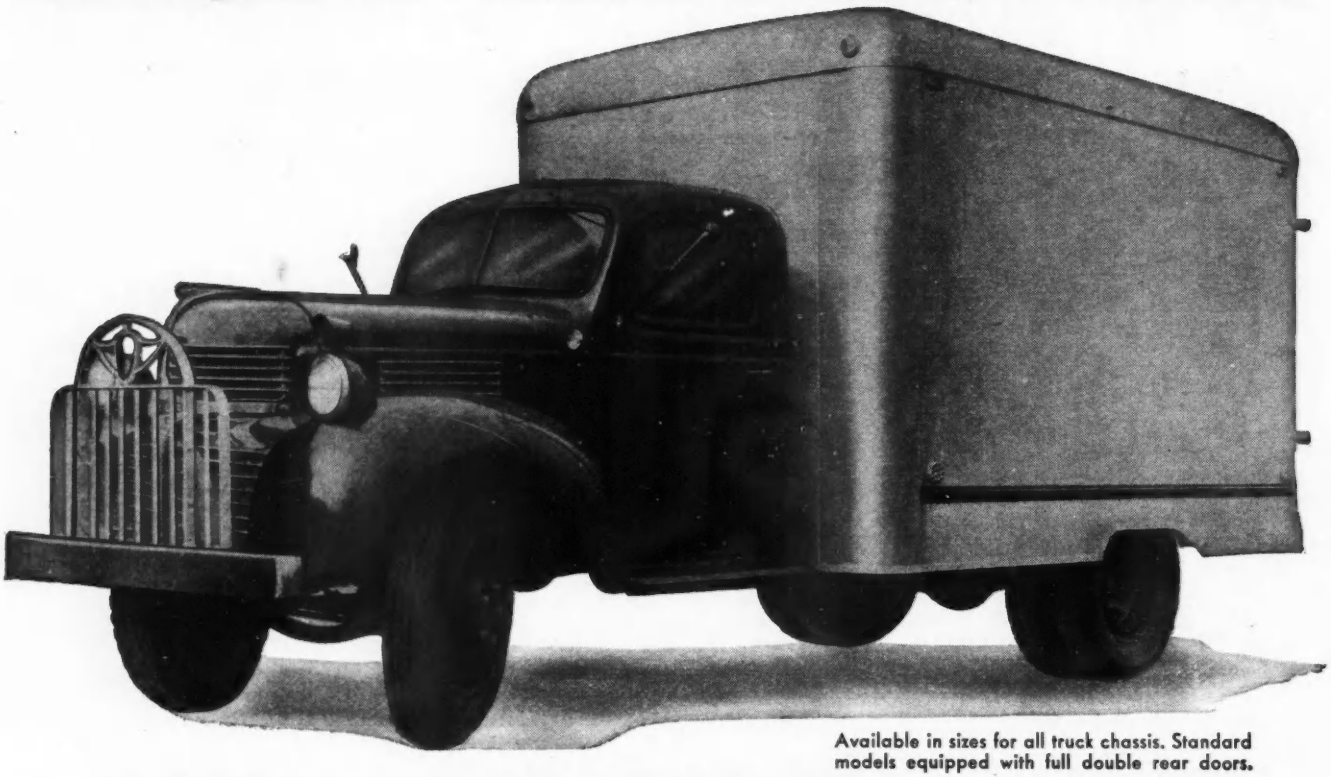


AVAILABLE NOW FROM YOUR AC SUPPLIER

AC GASOLINE STRAINERS

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

DRAMATIC SAVINGS IN TRUCKING COSTS WITH NEW E·B·Co ARMORLITE VAN PANELS



Available in sizes for all truck chassis. Standard models equipped with full double rear doors.

MAGNESIUM-ALUMINUM CONSTRUCTION cuts dead weight. LARGER INTERIORS take bigger payloads.

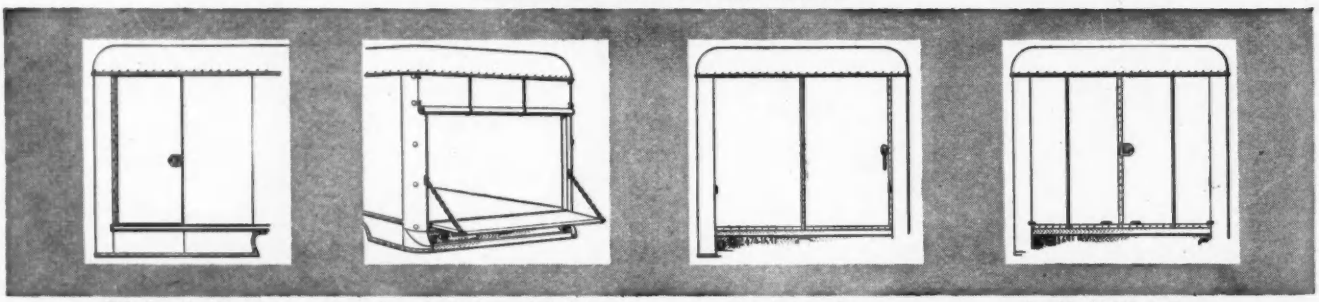
ALUMINUM-MAGNESIUM CONSTRUCTION reduces dead weight tremendously and lets you carry that much extra in payload. When running empty, weight reduction saves on gas, tires, wear and tear.

ENGINEERED AND PRECISION BUILT. Rugged die-formed magnesium frames, supporting side and roof panels of die-shaped aluminum, backed by Tekwood, are built into a handsome van panel body.

LARGER BODY INTERIORS... accommodate bigger loads permitted by greatly reduced body weight. Full 88" inside width and 78" inside height.

STREAMLINED BEAUTY... The modern design and handsome aerodynamic lines of Armorlite bodies are eye-catching assets of which their owners can well be proud. Armorlite's sleek streamlining also cuts wind resistance.

OPTIONAL DOOR EQUIPMENT



Side-Loading Door | Drop Endgate and Curtain | Single Rear Door | Double ¾ Width Doors

Available through leading distributors everywhere

Write today for literature and prices

Commercial Body Division, ELECTRIC BOAT COMPANY, Groton, Connecticut



Brother, you'll like what's in that package

A LO-EX* PISTON is a powerhouse. Listen to what it does for an engine—

Made of Alcoa Aluminum, it dissipates heat rapidly, enabling an engine to carry heavy loads safely. Light in weight, it places a minimum burden on bearings. Low in expansion, it can be fitted closely, contributing to quiet, economical operation.

"ALCOA LO-EX PISTONS by OHIO"—Engine rebuilders are assured of all those advantages when they ask for these pistons by name.

**LO-EX and ALCOA are registered trade marks of Aluminum Company of America, makers of castings for genuine LO-EX Pistons.*

LOOK FOR THE TRADE MARK



The OHIO PISTON Company
CLEVELAND, OHIO



Now...

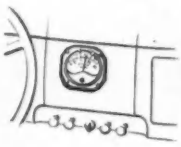
Cut Your Hauling Costs this Sure, Easy Way

Keep Your Trucks Operating in the Most Economical Range with SUN ELECTRIC TACHOMETERS

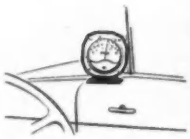
SUN ELECTRIC TACHOMETERS
Are Accurate . . . Easy to Read . . . Easy to Install



Mounted on the steering column.



Mounted directly in the truck instrument panel.



Mounted on panel surface with the convenient Sun Mounting Bracket.

It's a money-saving fact! Hauling costs come down when your trucks are equipped with Sun Electric Tachometers.

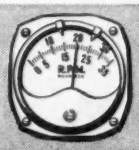
Why? Because these accurate, easy-to-read engine speed indicators help prevent over-speeding and "lugging." They tell drivers when to shift gears, speed up or slow down to get all the performance and economy that are built into the engine.

That means longer life for your truck engine, it means less wear and fewer costly repairs. It means you save on gas and oil, too.

Sun Electric Tachometers are *all-electric* . . . to provide a higher degree of accuracy than ordinary mechanical tachometers. They are *vibration-proof* . . . to assure long, dependable operation. And each is *factory-calibrated* for use on your particular make and model truck.

So take a tip from other progressive truck owners. Cut *your* hauling costs with Sun Electric Tachometers. For complete information see your truck dealer or local Truckstell distributor today. Or write The Truckstell Company, Union Commerce Building, Cleveland 14, Ohio.

SUN ELECTRIC TACHOMETERS



Approved AND DISTRIBUTED BY **TRUCKSTELL**
SPECIALIZED EQUIPMENT FOR PLUS PERFORMANCE

Manufactured by **SUN ELECTRIC CORPORATION, CHICAGO 31, ILLINOIS**

Anthony Company
Baker—Raulang Company
Beall Pipe & Tank Corporation
Beylea Truck Company
California Body & Trailer Co.
Callahan Engineering Company
Clough Equipment Service
Corbitt Company
DeKalb Commercial Body Co.
Edwards Iron Works Inc.
Fruehauf Trailer Company
Gar-Wood Industries
Herman Body Company
Heil Company
Isaacson Company
McCabe Powers Auto Body Co.
Mechanical Handling Systems, Inc.
Modern Vehicle Company
Novelty Carriage Works
Rogers Brothers Corporation
Standard Carriage Works Inc.
Standard Equipment Company
Trailmobile Company
Truck and Trailer Equipment Co.
Utility Trailer Mfg. Co.
Weber Trailer & Mfg. Co.
Western Auto & Truck Body Works



These 27 truck and trailer builders started their war on deadweight with

U·S·S COR-TEN

Here's what they tell us about this service-tested most used high-strength steel

▶ "This equipment using U·S·S COR-TEN in the main frames and goose neck assembly, was constructed in 1940 and has been in constant service since. During the rush of war work it has been necessary to severely overload this equipment. Our records show that this trailer travels approximately 5000 miles a month, has covered a distance of approximately 240,000 miles since it was put in service and has been operated with a minimum of repairs."

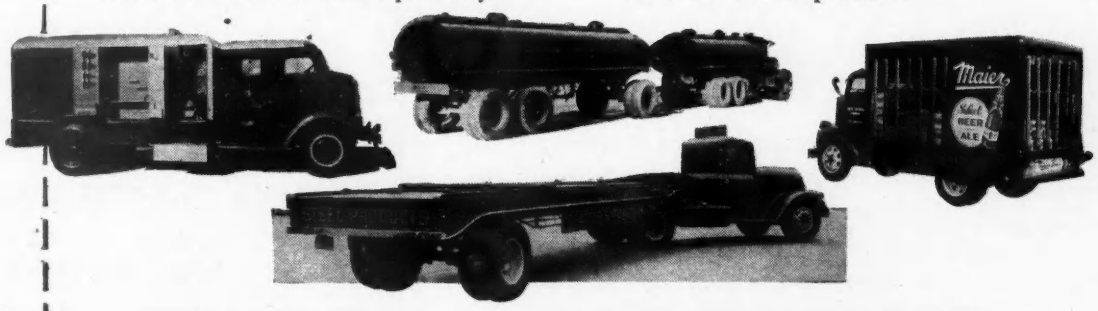
▶ "We save approximately 30% in weight by using U·S·S COR-TEN in place of standard auto body steel. This use of lighter gages does not lessen the strength in any way—in some cases we get even greater strength than formerly. We have never had any difficulty in shaping and bending U·S·S COR-TEN. It welds perfectly."

▶ "In more than 300 COR-TEN steel bodies now in highly successful operation, it has enabled us to produce equipment that is both lighter and stronger."

▶ "Because U·S·S COR-TEN has tremendous strength and elasticity which greatly increases resistance to "metal fatigue", such construction insures long life and uninterrupted service. We have found these COR-TEN bodies operate economically, free from the need for repairs far longer than bodies of ordinary steel."

▶ "By saving weight with COR-TEN, it is possible in some States to save $125.00 per trailer yearly in license fees."

▶ "During the war, when U·S·S COR-TEN was unavailable, we tried every other kind of steel on the market. Today we are back to COR-TEN 100 per cent."



U·S·S HIGH STRENGTH STEELS

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

7-89

USS HIGH STRENGTH STEEL UNITED STATES STEEL

UNITED STATES STEEL



The alert technician in the illustration is censoring film—the strength of film in Sinclair industrial lubricants designed for protection of your valuable machinery.

These tests prove that Sinclair lubricants have the film strength to keep moving metal parts separated under extreme temperature and pressure conditions. With the SAE film strength test machine, skilled laboratory technicians check constantly, reject sub-standard product, assure you of essential protection.

Every batch of lubricant in process gets an equally careful check for other all-important qualities. Constant research by Sinclair assures you of the benefits of new developments in film strength... and in all other prime lubricant qualities.

Sinclair Automotive Lubricants

For Engines:
OPALINE MOTOR OIL
OPALINE TBT MOTOR OIL
(For severe service)
TENOL (Heavy Duty—For Diesels)
For Gears:
OPALINE GEAR LUBRICANTS
For Chassis:
OPALINE CHASSIS LUBRICANT
For Wheel Bearings:
SINCOLUBE

SINCLAIR REFINING COMPANY • 630 FIFTH AVENUE, NEW YORK 20, N. Y.

SINCLAIR

Lubricants for Industry

FINEST CRUDES + EXPERT RESEARCH and MANUFACTURING CONTROL = OUTSTANDING PERFORMANCE

QUESTION:

What does a Walter Snow Fighter do when there's no snow?



ANSWER:

It hauls for road building; scrapes roads; works on construction jobs, floods, emergencies, etc.







THERE'S no "off-season" for Walter Snow Fighters. When winter is over, they earn their keep on countless maintenance, repair and construction jobs. Take off the plows and you have the most powerful, 100%-traction trucks for heavy hauling and difficult running conditions—on and off the road.

Remember—your Walter Snow Fighters have the exclusive Four-Point Positive Drive, with three automatic locking differentials—the "mechanical brain" that proportions power to each of the four driving wheels according to its traction at any instant. This provides unfailing traction in snow, ice, soft dirt, mud, steep grades —prevents wheel spinning and bogging down.

Your investment in Walter Snow Fighters gives you the fastest, most efficient snow clearing equipment, plus a bonus in year-'round usefulness. See your distributor—or write us for detailed literature.

WALTER MOTOR TRUCK CO. 1001-19 Irving Ave., Ridgewood 27, Queens, L. I., N. Y.

WALTER SNOW FIGHTERS

USED THE WORLD OVER



SUPERIOR
IS THE
WORD FOR
PERFECTION
BODY and HOIST
DESIGN



Write for name of nearest Perfection Distributor

THE PERFECTION STEEL BODY CO.
Galion, Ohio

PERFECTION
STAKE and DUMP BODIES
HYDRAULIC HOISTS

FOR ANY TRUCK
STANDARD or SPECIAL UNITS
IN ALL SIZES • FOR ANY USE

SAVE

Time & Money Cleaning Your Fleet

WHEN you wash vehicle bodies the Oakite way, you get STREAK-FREE surfaces in less time with less effort. Effective dirt-lifting, muscle-saving Oakite Composition No. 70 makes the big difference.

Easy To Use, Quick Action:

Simply wash surfaces with recommended solution of Oakite Composition No. 70. Then hose rinse. No chamoising necessary; just allow surfaces to dry down. You'll find that every trace of oil, grease, grime and traffic film is quickly, completely removed. Original bright finish restored. Washing time shortened. In a word, it's streak-free body washing at its easiest.

Kind To Surfaces:

Oakite Composition No. 70 is not only easy-to-use but safe-to-use as well. Doesn't harm decals, top varnish, painted or enameled surfaces. That means longer life for your truck finishes.

Advisory Service Free:

Your nearby Oakite Technical Service Representative welcomes the opportunity to help put your body-washing and maintenance cleaning program on a money-saving basis. Ask him to stop in. Or send for fact-packed Oakite Automotive Booklet which outlines many low-cost cleaning procedures for your fleet. No obligation, either way.

OAKITE PRODUCTS, INC., 26D Thames St., NEW YORK 6, N. Y
Technical Representatives in Principal Cities of U. S. & Canada

OAKITE
REG. U. S. PAT. OFF.

Specialized Industrial Cleaning
MATERIALS • METHODS • SERVICE



ZIP ON THE HIGHWAY ZIP, AND IT'S EMPTY!

It takes flexible power when a heavy load is a long load, too. And it takes quicker dumps—speeded by flexible power—at the end of the run to make the most of the hauling day.



Once again

THE ENGINEERS HAVE SPECIFIED

BLOOD-BROTHERS

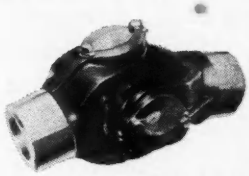
Universal Joints

to take power around corners

When Ward-LaFrance wanted transmission equipment to "take power around corners", they turned to Blood-Brothers and the organization that supplies more than a product.

Blood-Brothers quality is traditional. Its production and engineering facilities are founded on 40 years of continuous service to the automotive industry. Thus, Blood-Brothers is equipped — in men, machinery and performance—to "take power around corners" for you.

Learn what it is that has earned the respect and confidence of the automotive field. Write for complete engineering data.



A typical "N" Series Needle Bearing Universal Joint



BLOOD-BROTHERS MACHINE COMPANY

ALLEGAN, MICHIGAN

Universal Joints

Division of Standard Steel Spring Co.

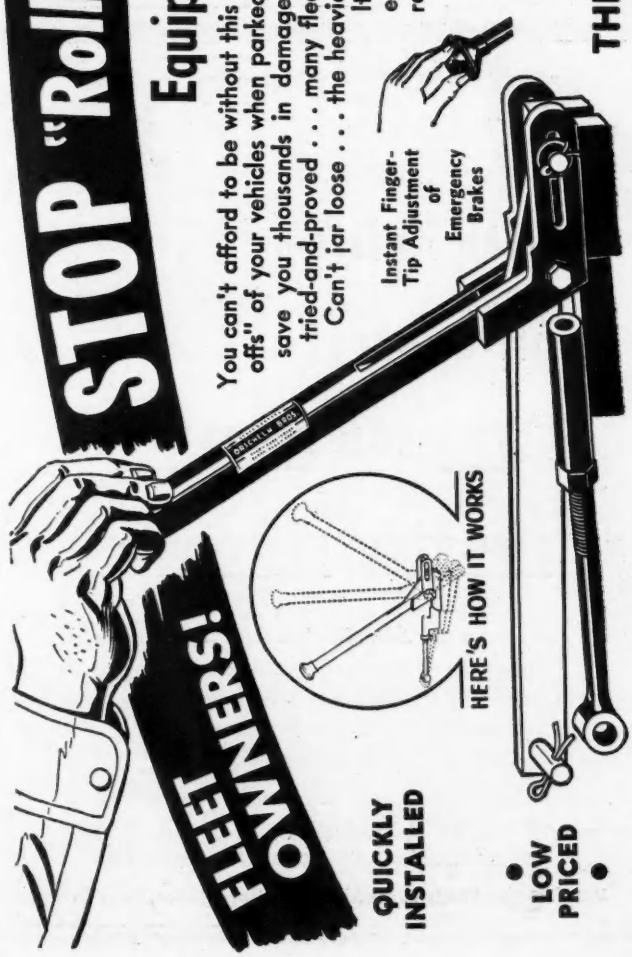
STOP "Roll-Off" Danger and Damage!

Equip Your TRUCKS, BUSES, TRACTORS with the Orscheln BRAKE LEVER

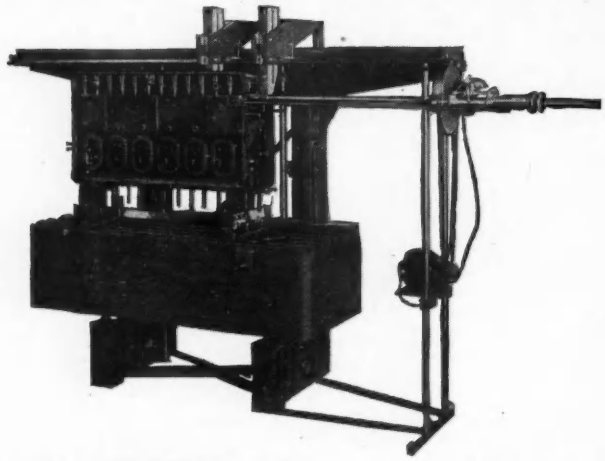
You can't afford to be without this positive protection against "roll-offs" of your vehicles when parked. Costs little to install and may save you thousands in damages. The Orscheln Brake Lever is tried-and-proved . . . many fleet owners have used it for years. Can't jar loose . . . the heavier the strain, the tighter it holds. It hooks right up to practically any emergency brake mechanisms already in vehicles. Quickly installed.

The Orscheln Brake Lever works on the over-center principle . . . pressure applied in setting brake is multiplied many times. A twist of the knob on the brake handle adjusts brakes as they loosen through wear. Sturdily built of finest materials to give years of satisfactory service and safety. **WRITE OR WIRE**—or see your local garage man. Investigate how little it costs to add this valuable safety feature to your vehicles.

THE ALKEN COMPANY 400 W. REED STREET, MOBERLY, MISSOURI



TOBIN-ARP Align Boring Machines



NEW DESIGNS: More Speed-Accuracy - Capacity - Accurate Centering

MODEL T. A. 15 (96 inch) is universal to align boring main and camshaft bearings of all engines with bearings 1 3/16 to 5¼" with spread of 96".

MODEL T. A. 14 (76 inch) to align boring main and cam shaft bearings 1 3/16 to 5¼" with overall spread of 76".

Write for complete details

TOBIN-ARP MFG. CO.

2845 Harriet Ave. So. Minneapolis 8, Minn.

DOES YOUR COOLING SYSTEM LEAK?



Best For Cracked Blocks, too!

DOES THE JOB OR YOUR MONEY BACK

When leaks develop in Cooling Systems, remember Moguloid! It's the amazing colloidal compounded of chrome and copper flour that cures block cracks and cooling system leaks fast with a positive actual metallic bond that will last a lifetime. For guaranteed results, be sure that you get Moguloid.



Get Your Moguloid Now!

MOGULOID COMPANY OF AMERICA

Division of Metallizing Company of America

1330 WEST CONGRESS STREET, CHICAGO 7

With Kelite pH Control you can measure cleaning efficiency!



Chart Copyrighted 1942 by Kelite Products, Inc.

Phone your local Kelite office for a Kelite Service Engineer

KELITE

SCIENTIFIC CLEANING THROUGH pH CONTROL

Kelite Products, Inc.

INDUSTRIAL CHEMICALS for CLEANING & PROCESSING

Manufacturing Plants in Los Angeles, Chicago, Dallas, Perth Amboy

---

Large Operators are Reporting . .

Longer Life AND Lower Maintenance

WITH . . BOWERS "Double Duty" TRUCK & BUS BATTERIES



BOWERS BATTERY & SPARK PLUG MFG. CO., INC., READING, PA.

Transfer, Storage, Trucking Business For Sale

Transfer and storage business in household and general commodity fields; advantageous interstate and Penn. intrastate operating authority.

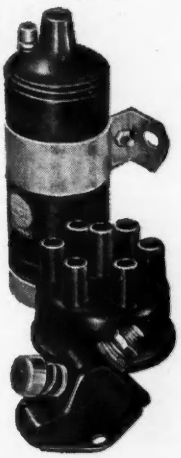
Modern storage warehouse, 25,600 sq. ft., Western Penn. Approx. 25 trucks and tractors, 30 trailers.

Sell household goods operations separately, if desired.

J. J. HARRINGTON & CO.

7 S. Dearborn St. Chicago 3

EVERYWHERE IN THE U.S.



There isn't a state in the Union that doesn't have fleets depending on Niehoff ignition products. Niehoff ignition products are built, tested and inspected to insure not just satisfactory, but superior performance regardless of whether the climate is hot, cold, wet or dry. Remember, there's a Niehoff jobber near you . . . get in touch with him today.

C. E. NIEHOFF & CO.

4925 Lawrence Ave., Chicago 30, Ill.
BRANCHES: 1342 S. Flower St., Los Angeles 15, Calif. 250 W. 54th St., New York 19, N. Y.

NIEHOFF

APPROVED QUALITY PRODUCTS

DAVISBILT MEANS BETTERBILT FLUID CARRIERS

TRAILERS AND SEMI-TRAILERS

TRANSPORTS

TANK-TRUCKS

AIRPORT REFUELERS

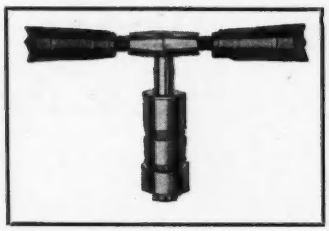
FUELOIL UNITS

SPECIAL BUILT UNITS

Both STANDARD production line units and SPECIAL BUILT units are expertly designed by practical Specialized Engineers. Serving both majors and independents since 1913.

DAVISBILT **THE DAVISBILT PRODUCTS CO.**
AFFILIATED WITH LIBERTY AIRCRAFT PRODUCTS CORP.
CINCINNATI, OHIO

TITAN-KIRKLAND COMBINATION STUD DRIVER AND PULLER . . .



• Incorporates roll action to GRIP as little as ½" of unthreaded body of stud.

This production stud setting tool requires only a slight left or right hand turn to effect a grip on the stud. When the chuck of the tool is lowered over a stud, the upper end of the stud contacts an adjustable stop screw. This automatically elevates the core and brings the rolls into centralized contact to the cam surfaces in the driving member and the stud. When rotation is stopped, the tool may be lifted off the stud without reversing the direction of rotation.

Made in T-Handle, Ratchet, and Power styles; in standard sizes from 3/16" to 1" inclusive. Larger sizes on request.

WRITE FOR LITERATURE TODAY

TITAN TOOLS **TITAN TOOL CO.**
Production Tools
FAIRVIEW, PA.

Can you use a HOTTER 10 mm. PLUG?

LEONARD SPECIAL 10 MM. PLUG FOR FOULING ONLY

Our engineers have recently developed a 10 mm. plug to be used in cases of extreme fouling. These plugs are packed in sets of six spaced for Chevrolet and will eliminate fouling troubles in all 10 mm. installations.

From your jobber
LEONARD SPARK PLUG CO., INC.
NEWARK 4, N. J.

PATENTED **LEONARD** Air Cooled SPARK PLUGS

"KING" FAST CHARGERS show OVERALL Charging Voltage

"KING" Fast Chargers show the OVERALL charging voltage and by maintaining this voltage at 7.5 and not to exceed 8 volts, the correct charging rate in amperage is automatically controlled. For this reason excessive heat and damage to plates is prevented. This makes the "KING" Fast Charger safe and simple to use.

A battery clear of sulphate will take the entire output of the Charger at the start of the charge without the voltage exceeding 7.5 volts. The colored meter dials on the "KING" Fast Charger clearly indicate normal and excessive voltages.

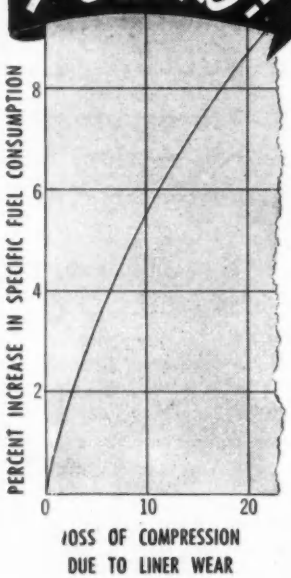


Ask Your Jobber or Write Us

The ELECTRIC HEAT CONTROL Co.
9127 INMAN AVENUE • CLEVELAND 5, OHIO

GOOD "KING" PRODUCTS SINCE 1914

FOUND! THE "MISSING LINK" *in Efficient* **DIESEL OPERATION**



This graph, taken from test data compiled during a three year study of Diesel operating factors by one of the world's largest independent technical research laboratories, shows that 20 pound loss of compression due to liner wear causes 9% increase in specific fuel consumption. Other data in the study show that loss of compression adversely affects Diesel performance in many other ways. It causes power waste, over-heating, increased lube-oil consumption, starting difficulties, roughness of operation, etc.

This invaluable data—proved under actual operating conditions—has long been the "missing link" in efficient Diesel operation. Learn about it now—use the coupon below.

BACHARACH INDUSTRIAL INSTRUMENT CO., 7000 BENNETT ST., PITTSBURGH 8, PA.

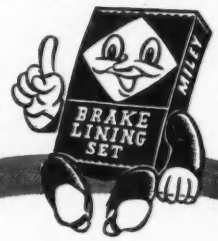
Send me Free Graphs from the "3 Year Study of Diesel Operation"

NAME_____ POSITION_____

COMPANY_____

STREET_____

CITY AND STATE_____

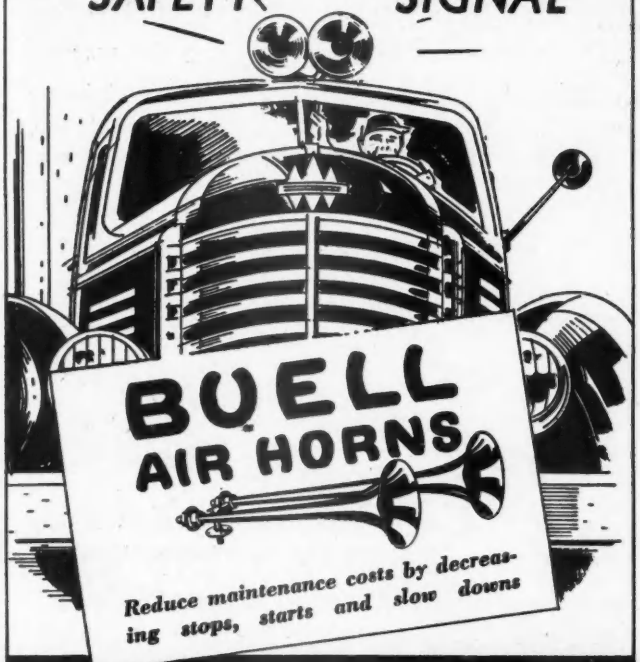


MILEY
Black Gold

Brake Lining—Stops Cars faster by actual Police Test.

L. J. MILEY COMPANY
1060 West Adams Chicago 7

THE TOP SAFETY SIGNAL



BUELL MFG. CO., CHICAGO 16

Warning Signals Since 1912

2988 COTTAGE GROVE AVENUE

Multiplied Savings

FOR FLEETS

Replace **WORN THERMOSTATS** *with*

DOLE

Adjustable THERMOSTATS

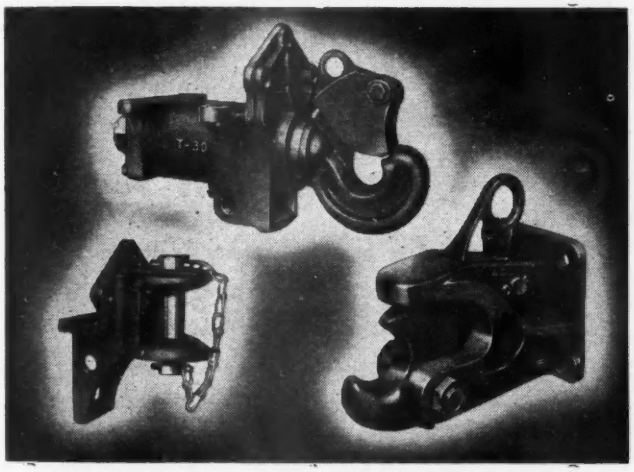


An adjustable thermostat improves motor performance by providing accurate temperature control winter and summer. It assures quick warm-up and reduces crank case dilution and engine wear... saves gasoline and oil... The more trucks, the greater the saving.

THE DOLE VALVE COMPANY

1901-1941 Carroll Avenue — Chicago 12, Illinois

Representatives in Principal Cities



NEW Double Acting Pintle Hooks
Automatic Industrial Couplers
Solid Couplers for Trucks & Trailers

Write for detailed specifications of the complete Holland line.

All types for all purposes—engineered for smooth, efficient performance, with many special features that make the Holland line preferred by experienced truck and trailer fleet operators. Whatever your needs in pintle hooks, couplers, bars, or hitches, come to Holland with your problems;—you'll find the right product for the right spot. Made by the makers of Famous Holland fifth wheels and landing gears.

ENGINEERED BY

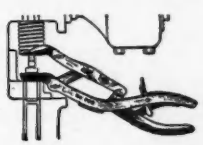
HOLLAND HITCH COMPANY

HOLLAND, MICHIGAN, U. S. A.

MAKE HARD JOBS EASY *and* PUT PROFIT *in* YOUR POCKET

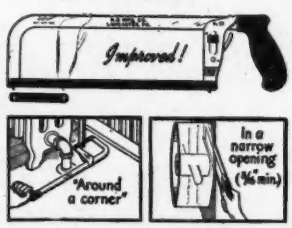


The NEW K-D 337 Cadillac Compressor Set services all Cadillac & LaSalle motors from 1935. One mechanic can remove and replace all valves without walking from side to side. Sturdy steel construction. Unique brake provides instant, positive locking at height desired.



Working in the valve chamber from under the fender is a tough job. K-D 900 "Hi-Offset" Lifter makes it easy. Allows ample working space and clear view of valve. 3" parallel lift with auxiliary jaws in place.

Improved K-D 99 Convertible Hacksaw Frame—saws around corners and in narrow openings. New locking device features quick blade changes, assures correct tension. One 3", one 12" blade furnished. All steel frame.



K-D Hustlers for Your Toolbox can be obtained at Automotive Jobbers everywhere. Write for latest catalog.

THEY'RE K-D TOOLS

K-D MFG. CO., LANCASTER, PA., HAMILTON, ONT.

For **SAFETY** LIGHTING and EQUIPMENT

IT'S **DO-RAY** ALL THE WAY

DO-RAY Tested by RECOGNIZED TESTING LABORATORIES PASSING SPECIFICATIONS OF S.A.E. AND I.E.S. MEETING REQUIREMENTS OF I.C.C. CERTIFIED PRODUCT — SAFER LIGHT — SAFER SIGHT

DO-RAY LAMP COMPANY

1458 SO. MICHIGAN AVE. CHICAGO

GASOLINE Sterling DIESEL

MOTOR TRUCKS

ARE BUILT TO "PERFORM BETTER LONGER"

Rugged, heavy duty models for highway transportation, hauling heavy machinery, mining, excavating, quarrying, logging, etc.

STERLING MOTORS CORPORATION

MILWAUKEE 1, WISCONSIN

Branches in Principal Cities



REPAIR CRACKED BLOCKS AND HEADS—

QUICKLY, EASILY AT LOW COST

Cut down costly repair time. Keep cars and trucks on the road. Repair external and internal leaks in blocks, cylinders, valve ports and radiators with amazing

L U S C O

PLASTIC SEAL

90 days' service guaranteed or your MONEY BACK. Send money order or check for full pint—more than enough for average repair job. Ask for quantity discounts and give name of your supply jobber.

SEND **$3** FOR FULL PINT PREPAID

* * *

AVAILABLE ALSO in 4 oz. $1.00 bottles and in LUSCO SEALWEL CUBES 35¢.

C. F. LUSK CO. 5918 Bonna Ave., Cleveland, Ohio

ELIMINATE SANDING and ELBOW GREASE

Remove RUST Chemically

with ***METALPREP 79***



• In preparing metal for paint, don't do it the hard way. Use the proven cleaner, METALPREP 79, on your refinishing jobs. It's easy, more effective and thorough. Simply BRUSH ON, STEEL-WOOL, SCRUB and WIPE OFF. Now nationally distributed.

Ask your jobber or write for Bulletin 47-76.

JOBBERS: Add profit with Metalprep.

NEILSON CHEMICAL CO.

6570 Benson St., Detroit 7, Michigan

Windsor, Ont. Los Angeles, Calif.

AIRBRAKE HOSE ENDS



Made by a nationally famous manufacturer

•

Brass couplings with ¼" or ½" pipe threads. Will fit all tractors using air brakes

•

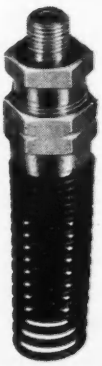
Immediate delivery from stock

Our Price 76¢

Get yours while they last. Order today direct from

LINETT AUTO SUPPLY

Box 353, West Chester, Pa.



GENUINE **ALMETAL** PRODUCTS

Dependable quality drive shaft assemblies for passenger cars, trucks and busses.

Consult your local Almetal jobber for assistance on your Universal Joint problems.

THE ALMETAL UNIVERSAL JOINT CO.

1555 EAST 55th STREET · CLEVELAND 3, OHIO

"Tailor-Make" **Your Adjustment**

Push it back or forth; up or down. Extension 14" to 22".

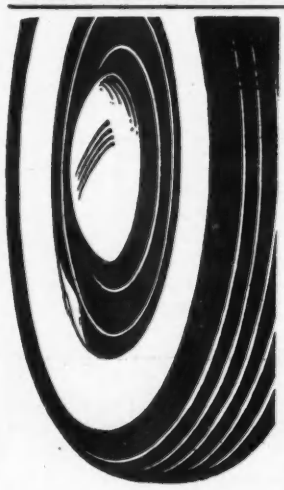
Hindview **Mirror**

Ball and socket joint has built-in spring tension.

Illustration shows one truck-model mirror at 3 angles, 3 lengths.

WHITEHEAD STAMPING CO.

1685 W. Lafayette Blvd. Detroit 16, Michigan



SNUGL FAD-A-WAY AUTOMOTIVE WHEEL BALANCING WEIGHTS

TRUCKS • BUSES • PASS. CARS



PAT. NO. D-119-321—D-5189

MID-WESTERN AUTO PARTS

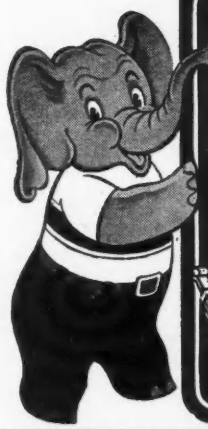
(FACTORY)

824 E. ELM ST.

KOKOMO, INDIANA

MID WESTERN AUTO PARTS

736 S. Greenleaf Whittier, Calif.



MAREMONT HAS WHAT IT TAKES

•

MUFFLERS—TAILPIPES
ALLOY STEEL SPRINGS

•

MAREMONT AUTOMOTIVE PRODUCTS, INC.
SO. ASHLAND AT 16TH ST.
CHICAGO 8, ILLINOIS



WITTEK
NOC-OUT
HOSE CLAMPS

The standard of the industry. Quick-tightening, perfect leakproof hose connections for original equipment and replacement. For Radiator, Heater, Booster Brakes and High Pressure hose connections.

WITTEK MANUFACTURING CO.
1505-15 W. 24th Place, Chicago 23, Ill.

AUSTIN

TRAILER EQUIPMENT COMPANY

•

ENGINEERED TRUCK AND TRAILER PRODUCTS

MUSKEGON, MICHIGAN

MAINTENANCE MEN WHO KNOW SPECIFY . . .

• There is a FLARE chemical for every automotive need. FLARE quality is unexcelled. Specify FLARE for added trouble-free mileage.

Flare
The Complete Line of AUTOMOTIVE CHEMICALS

ESTABLISHED 1920
THE BELL COMPANY, INC.
411-15 NO. WOLCOTT • CHICAGO 22, ILL.

TRANSPORTATION SERVICE IS TOUGH
***and so are* JONES TACHOMETERS**

When your engines are equipped with JONES TACHOMETERS, you are sure of accurate speed measurements regardless of vibration, hard usage, or other conditions which cause the breakdown or inaccuracies of other types of instruments. There's no delicate mechanism to cause inaccurate readings on the dial. The centrifugal action of a fly ball governor develops a force, equivalent to seven or eight pounds, to give positive movement to the pointer. Tested and approved under applicable Government specifications, you'll find them standing the gaff everywhere. That is why whatever your operating conditions, you'll find the JONES TACHOMETER has the "staying power" to meet all difficult service requirements.



Type 1081 JONES TACHOMETER with range indicated.

Write for Catalog 146

JONES MOTROLA CORP.
438 FAIRFIELD AVENUE STAMFORD, CONN.



Index to

This Advertisers' Index is published of the advertising contract. Every rectly. No allowance will be made

AC Spark Plug Div. ..185-195-215-231
Airtex Automotive Div. 22
Albertson & Co., Inc. 191
Alken Company, The 239
Allied Motor Parts Co. 228
Alloy Steel Div. 213
Almetal Universal Joint Co., The 244
American Bosch Corp. 228
American Brake Shoe Co. 105
American Chain & Cable Co. 102
American Hammered Piston Ring Div., Koppers Co., Inc..... 157
American Safety Tank Co. 222
American Steel & Wire Co..... 235
American Steel Foundries 108
Ansul Chemical Co. Fire Extinguisher Div. 134
Armstrong Rubber Co. 220
Arrow Safety Device Co. 26
Ashley Quixign Company 201
Austin Trailer Equip. Co. 245
Autocar Company 17
Automotive & Aircraft Div., Amer. Chain & Cable Co. 102
Autopulse Corp. 226
Available Truck Co. 226

Bacharach Industrial Instrument Co. 242
Belden Mfg. Co. 228
Bell Co., Inc., The 245
Bendix Aviation Corp., Bendix Products Div. 87
Bishman Mfg. Co. 110
Black & Decker Mfg. Co. 167
Blackhawk Mfg. Co. 228
Blood Bros. Machine Co. 239
Blue Crown Spark Plug Co. 226
Bostrom Mfg. Co. 169
Bower Roller Bearing Co. 163
Bowers Battery & Spark Plug Mfg. Co., Inc. 240
Bowes Seal Fast Corp. 207
Braden Winch Company 161
Budd Company, The 127
Buell Manufacturing Co. 243
Butler Engineering Co. 150-151

Cal-Van Machine Products, Inc. .. 224
Cam Tool Co., Inc. 122
Campbell & Reynolds 228
Carnegie-Illinois Steel Corp. 235
Carter Carburetor Corp. 173
Casite Corp., The 109
Champ-Items, Inc. 226
Champion Spark Plug Co..... 9
Chrysler Corporation (Parts Div.) 135
Clark Equipment Co. 119-120
Clawson & Bals, Inc. 181
Columbia Steel Co. 235
Columbus-McKinnon Chain Co.... 228
Cooper Tire & Rubber Company.. 162
Crescent Co., Inc. The..... 220
Cummins Engine Co., Inc. 1
Curtis Pneumatic Machinery Div. Curtis Mfg. Co. 220

Davisbilt Products Co., The..... 241
Dayton Rubber Mfg. Co. 197-211
Dayton Steel Foundry Co., The... 228
DeLuxe Products Corp. 206
Detroit Automotive Products Corp. 164
De Vilbiss Company, The 222
Diamond T Motor Car Co. 83
Dill Mfg. Co., The..... 80
Dodge Div. Chrysler Corp., 2nd cover
Dole Valve Co. 243
Do-Ray Lamp Co. 244
Dorsey Trailers 219
Duplex Truck Co. 222

Eaton Manufacturing Co. 2
Eberhard Mfg. Co. 124
Edison, Inc., Thos. A. 85
Electric Boat Co. 232
Electric Heat Control Co., The... 242
Electric Storage Battery Co., The 95
Evans Products Co. 220
Excello Specialty Co. 228

FAB Mfg. Co. 130
Federal-Mogul Service 111
Federal Motor Truck Co. 101
Fire Extinguisher Div. Ansul Chemical Co. 134
Fitzgerald Mfg. Co., The 220
Flare Laboratories 245
Flour City Brush Co. 247
Ford Motor Co. 6
Four Wheel Drive Auto Co., Back Cover
Fram Corporation 165
Freedom-Valvoline Oil Co. 153
Frink, Mfr., Carl H. 226
Fruehauf Trailer Co. 77
Fuller Mfg. Co. 188

Gar Wood Industries, Inc. 145
Gatke Corp. 226
General-Detroit Corp., The 193
General Electric Co. 178
General Tire & Rubber Co. .. 140-141
Gillette Tire Div. 194
Globe-Union, Inc. 25
Goodrich Company, B. F. 107
Gramm Trailer Corp. 180
Grico Two-Axle Drive Co. 224
Grizzly Mfg. Co. 116
Grote Mfg. Co., Inc. 226
Guide Lamp Div. 166
Gulf Oil Corp. 170
Gunite Foundries Corp. 121

Hall Mfg. Co., The 228
Hall-Scott Motor Car Div..... 220
Hansen Mfg. Co., A. L. 192
Harrington Co., J. J. 241
Hart Pressed Steel Corp. 152
Hastings Mfg. Co. 113
Heil Company, The 223
Hein-Werner Motor Parts Corp... 216
Hendrickson Motor Truck Co..... 118
Herbrand Corp., The 88
Highway Safety Appliances, Inc.. 226
Highway Trailer Co. 187
Holland Hitch Co. 243
Hollingshead Corp., R. M. 15
Hoof Products Co. 32
Hydraulic Specialties Co. 228
Hygrade Products Co., Inc. 156

Imperial Brass Mfg. Co., The 171
Inland Rubber Corp. 182-183
International Chain & Mfg. Co... 222
International Harvester Co. 32

Jones-Motrola Corp. 245
Joyce-Cridland Co., The..... 226

K-D Mfg. Co. 243
Keel & Co., Inc. 222
Kelite Products Inc. 240
Kelly-Springfield Tire Co. 30
Kelsey-Hayes Wheel Co. 186
Ken Tool Mfg. Co. 220
Kingham Trailer Co., Inc. 168
Kinnear Mfg. Co., The 224
Kold-Hold Mfg. Co. 90
Koppers Co., Inc., Amer. Hammered P. R. Div. 157
Krieger Steel Sections, Inc. 115

Laitner & Sons, A. 67
Lee Company, K. O. 205
Leece-Neville Co. 66
Leonard Spark Plug Co., Inc..... 242
Libbey-Owens Ford Glass Co. 174
Lindsay Corporation, The 71
Linett Auto Supply 244
Lipe-Rollway Corporation 184
Loney Co., Harley C. 195
Long Mfg. Div. 133
Lusk Co., C. F. 244

Mack Trucks, Inc. 92
Maremont Auto. Prod., Inc. 245
Marquette Mfg. Co., Inc. 148
Marvel-Schebler Carburetor Div.. 245
Meyercord Co., The 137
Michiana Products Corp. 224
Mid-Continent Petroleum Corp.... 24
Midland Steel Products Co. 79
Mid-Western Auto Parts 244
Miley Co., Inc., L. J. 242
Milwaukee Dustless Brush Co. .. 210
Minnesota Automotive, Inc. 208
Moguloid Co. of Amer. 240
Mohawk Rubber Co. 172
Monmouth Products Co. 222
Moog Piston Ring Co., Div. Moog Industries, Inc. 149
Moraine Products Div. 225

National Auto. Parts Assn. 224
National Tube Co. 235
Neilson Chemical Co. 244
New Britain Machine Co. 117
New York Air Brake Co., The..... 204
Niehoff & Co., C. E. 241

Oakite Products, Inc. 238
Ohio Oil Co., The 209
Ohio Piston Co., The 233
Oshkosh Motor Truck, Inc. 23
Owatonna Tool Co. 144

Pacific Coast Brush Co. 247
Packard Electric Div. 202
Pedrick Piston Rings 14
Perfect Circle Co., The 7
Perfection Steel Body Co. 238
Permalux Company, The 226
Permatex Co., Inc. 3
Prior Products, Inc. 214
Puritan Company, Inc. 136
Purolator Products, Inc. 212

Quaker State Oil Refining Corp... 159

Ramsey Corporation 224
Raybestos Div. Raybestos-Manhattan, Inc. 10
Refill Filter Co. 222
Reo Motors, Inc.....Front Cover
Republic Steel Corp. 213
Reynolds Metals Co. 139
Roadmaster Products Co. 16
Rowland, Inc., William & Harvey 86

Advertisers

as a convenience, and not as part care will be taken to index cor- for errors or failure to insert

Ruger Equipment Co., Inc. 106
Russell Mfg. Co., The 158

S K F Industries, Inc. 229
St. Paul Hydraulic Hoist Co. 31
Safety & Maintenance Co., Inc..... 142
Scully Signal Co. 218
Sealed Power Corp. 91
Service Recorder Co., The 114
Shand & Jurs Co. 128
Shuler Axle Co., Inc. 99
Si-En-Tif-Ik Products Co., Inc... 112
Signal-Stat Corp. 146
Sinclair Refining Co. 236
Snap-On Tools Corp. 224
Snyder Tank Corporation 220
South Bend Lathe Wks. 126
Spencer Thermostat Co. 176
Spicer Mfg. Div. of Dana Corp.... 175
Standard Forge & Axle Co. 217
Standard Oil Co. (Calif.) 203
Standard Oil Co. (Indiana) 11
Steel Products Co. Inc. 8
Sterling Motors Corp. 244
Stewart-Warner Corp. 154-155
Studebaker Corp. 75
Sweeney Mfg. Co., B. K. 138

Teleoptic Co., The 103
Tennessee Coal, Iron & R. R. Co... 235
Texas Co., The 4-5
Textileather Corp. 84
Thermoid Co. 220
Thompson Products, Inc. 147
Timken-Detroit Axle Co. 12-13
Timken Roller Bearing Co., The... 224
Titan Tool Company 241
Tobin-Arp Mfg. Co. 240
Toledo Steel Products Co. 129
Trailmobile Co., The 81
Trico Products Corp. 143
Truckstell Co., The 97-160-200-234
Trucktor Corp., The 227
Tulsa Winch Div. 196

U. S. Rubber Co. 18-19-131-194
U. S. Thermo Control Co. 179
United States Steel Corp..... 235
Universal Tire Tool Co. 218

Van Norman Company 27
Vickers, Inc. 125

Waber Company, The..... 224
Wagner Electric Corp. 89-123
Walker Mfg. Co. of Wis. 20-21
Walter Motor Truck Co. 237
War Assets Administration .. 177-248
Ward LaFrance Truck Div., Great American, Inc. 198
Warner Electric Brake Mfg. Co. 28-29
Warner-Patterson Co. 104
Waukesha Motor Co. 222
Waverly Petroleum Products Co. 142
Wayne Pump Co. 132
Wellman Co., S. K., The 224
White Motor Co., The 65
Whitehead Stamping Co. 244
Wilcox-Rich Div. 2
Wilkening Mfg. Co. 14
Willard Storage Battery Co. 3rd Cover
Williams & Co., J. H. 189
Wiry Joe 220
Wittek Mfg. Co. 245
Wohlert Corp. 226
Wolf's Head Oil Refining Co., Inc. 190

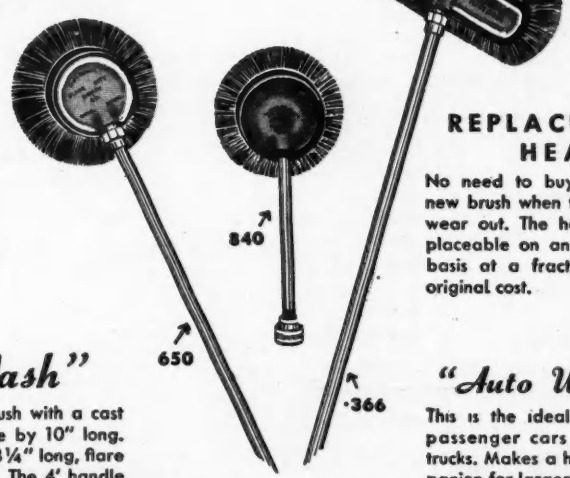
Yankee Metal Prod. Corp. 222

Zehr Products Co. 222
Zollner Machine Wks. 221



ONE EASY OPERATION
—LOOSENS THE DIRT—WASHES IT OFF—

A constant flow of clean water *right where the cleaning is being done* helps loosen the dirt and carries it away. Flour City brushes are the answer for a speedy, clean wash. The long handle and fountain head with tough, close-set bristles make it easy to reach all surfaces and remove the toughest dirt.



REPLACEABLE HEAD

No need to buy a whole new brush when the bristles wear out. The head is replaceable on an exchange basis at a fraction of the original cost.

"Bus Wash"

This round type brush is made in two grades, **No. 650H** with horsehair bristles —**$7.95. No. 650BM** with imported pig bristles—**$12.75.** Both brushes have round, cast aluminum head 5" in diameter, with 4' hollow seamless steel handle equipped with brass fittings.

"Fleet Wash"

This is an oblong type brush with a cast aluminum head 2⅞" wide by 10" long. The imported pig bristles 3¼" long, flare to a 12" cleaning surface. The 4' handle is hollow, seamless steel equipped with brass fittings.

No. 366 . . . . . $14.75

"Auto Wash"

This is the ideal brush for passenger cars and light trucks. Makes a handy companion for larger brushes on big jobs, too. Has a hollow 8½" handle and a 3½" round head. **No 840 $3.95**

Our New Catalog Sheet will be Sent on Request

FLOUR CITY BRUSH CO. • MINNEAPOLIS 15, MINNESOTA
PACIFIC COAST BRUSH CO. • LOS ANGELES 21, CALIFORNIA

INDUSTRY

MAINTENANCE SHOPS

DISTRIBUTORS

DEALERS

Depend on WAA for the

ARC WELDERS

You need





Through WAA you have a rare chance to get needed welders at minimum cost. All machines are of such well-known makes as Lincoln, Hobart, Westinghouse —all will give years of hard service.

★ ★ ★

TYPES AVAILABLE:

DC welding machines; electric motor driven generator; single operator type; 200, 300, 400 and 600 ampere capacity.

AC welding machines; single operator, transformer type; 300, 400 and 500 ampere capacity.

AC welding transformers for use in automatic arc welding process.

See our display booth at Western Metal Exposition and Congress Show at Oakland, California, March 22 to 27, 1947.

INVENTORIES ARE LOCATED IN THESE CITIES:

Atlanta	Little Rock
Boston	New Orleans
Birmingham	Houston
Cleveland	Portland, Oregon
Detroit	Philadelphia
Fort Worth	Richmond
Jacksonville	San Antonio
Louisville	Seattle
Los Angeles	San Francisco

Write to the above Regional Offices to have your name placed on the mailing lists for equipment of this type.

AT AMAZING LOW PRICES

Millions of pounds of welding electrodes, welding rods and welding wire of carbon steel, stainless steel and non-ferrous metals.

All arc welders are sold under existing priority regulations. VETERANS OF WORLD WAR II are invited to be certified at the War Assets Administration Certifying Office serving their area, and then to purchase the materials offered herein.

EXPORTERS: Your business is solicited. If sales are conducted at various levels you will be considered as a wholesaler. Any inquiries concerning export control should be referred to Office of International Trade, Department of Commerce, Washington, D. C.

OFFICE OF GENERAL DISPOSAL

WAR ASSETS ADMINISTRATION

GOVERNMENT WAA SURPLUS

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago Cincinnati • Cleveland • Dallas • Denver • Detroit • Fort Worth • Helena Houston • Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles • Louisville • Minneapolis Nashville • New Orleans • New York • Omaha • Philadelphia • Portland, Ore. • Richmond • St. Louis Salt Lake City • San Antonio • San Francisco • Seattle • Spokane • Tulsa

1026



Quick Starts . . . Long Life

WILLARD BATTERIES — Automobile Truck and Bus • Radio • Motorcycle Tractor • Aircraft • Marine • Diesel Stationary — Sold and serviced by Willard Dealers everywhere.

"SAFETY-FILL" COMMERCIAL AND DIESEL BATTERIES

Willard

Dependability • Performance • Long Life

WILLARD STORAGE BATTERY CO. • CLEVELAND • LOS ANGELES • DALLAS • TORONTO



Logging . . strenuous service for any equipment . . uses F W D Trucks for the tough hauls



Lumber begins with logging — and logging involves "rugged" operations that test the sturdiest machines and equipment.

The tough hauls — the heavy loads, sometimes 50 tons or more of logs, are usually assigned to FWD four-wheel-drive trucks. The greater pulling power and sure-footed traction of drive on both front and rear axles of FWDs enable them to get through despite mud, sand, and on brush-tangled forest trail . . . Hauling heavy loads at comparatively high speeds with greater surety and safety on the open road is an added FWD advantage. Ability to take the punishment of logging operations day after day with less "time out", marks the performance of FWDs, as well.

Here is another essential industry well served by FWD four-wheel-drive trucks.

America's Foremost **FWD** *Heavy-Duty Truck*

THE FOUR WHEEL DRIVE AUTO COMPANY, Clintonville, Wisconsin

Canadian Factory: **KITCHENER, ONTARIO**